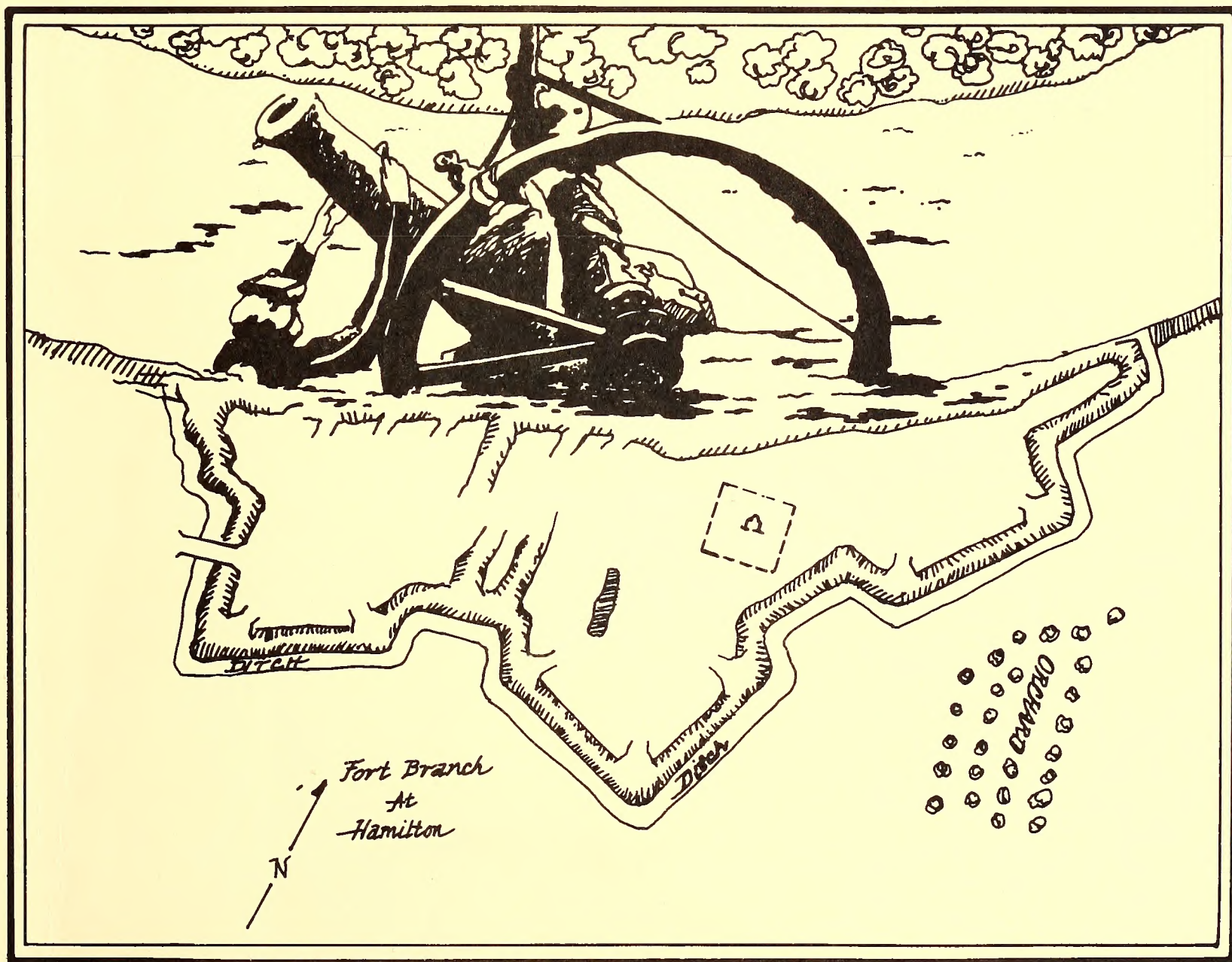



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FORT BRANCH SURVEY & RECOVERY PROJECT

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UNDERWATER ARCHAEOLOGY BRANCH
DIVISION OF ARCHIVES & HISTORY
NORTH CAROLINA DEPARTMENT OF CULTURAL RESOURCES
RALEIGH, 1979



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THE FORT BRANCH
SURVEY AND RECOVERY PROJECT

by

Gordon P. Watts, Jr.

and

Leslie S. Bright, James A. Duff,
Dina B. Hill, Richard W. Lawrence,
James A. Pleasants, Jr., J. Reed Whitesell

Underwater Archaeology Branch
North Carolina Division of Archives and History

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INTRODUCTION

During the Civil War the Confederate fortification at Rainbow Banks, located in Martin County, North Carolina, performed a vital role in the defense of the Roanoke River valley. Constructed in 1862, Fort Branch controlled the Roanoke River in the vicinity of Hamilton and protected the railroad bridge at Weldon. The fortification also ensured the safety of shipyards farther upriver at Halifax and Edwards Ferry where ironclad vessels were under construction. The presence of Fort Branch served as a deterrent to Union advances on the Roanoke River until the final collapse of the Confederacy in the spring of 1865. When the fortification was abandoned in April of that year, ordnance, along with a large amount of equipment and supplies, was thrown into the river.

With the exception of three cannon recovered by the Union navy in 1865, the ordnance remained undisturbed until 1972 when an illegal salvage operation recovered three cannon and a large number of small artifacts from a section of the river adjacent to the fortification. Although the cannon were later declared to be the property of the state of North Carolina, the publicity resulting from the salvage

and subsequent court proceedings led to extensive looting of the site. In an effort to preserve the remaining material, the Underwater Archaeology Branch of the North Carolina Division of Archives and History organized the Fort Branch Survey and Recovery Project. The operation was planned in conjunction with the 1977 Field School in Underwater Archaeology, the fourth cooperative field school sponsored by the Division of Archives and History and the University of North Carolina at Wilmington.

The project was conducted in four phases. Phase One involved intensive background research into the history of the fort and its immediate vicinity and was initiated more than a year prior to the field operation. During Phase Two an accurate topographic map of the fortification was produced and a magnetic survey of the fort and adjacent river was conducted in an effort to identify areas of artifact concentration.

Once the surveys had been completed, Phase Three, or the recovery phase, was begun with an intensive search of the areas of magnetic anomaly. The positions of artifacts on the river bottom were plotted on the site map and small articles were recovered, tagged, cataloged, documented photographically, and placed in temporary wet storage as

they were located. When the search areas were cleared of small artifacts, the recovery of the four cannon, the carriages, and the carriage wheels was conducted with the assistance of the United States Army Reserve. Following recovery, preservation was initiated in Phase Four and included dismounting the cannon from their carriages as well as cleaning and preservation of the cannon, carriages, and small artifacts.

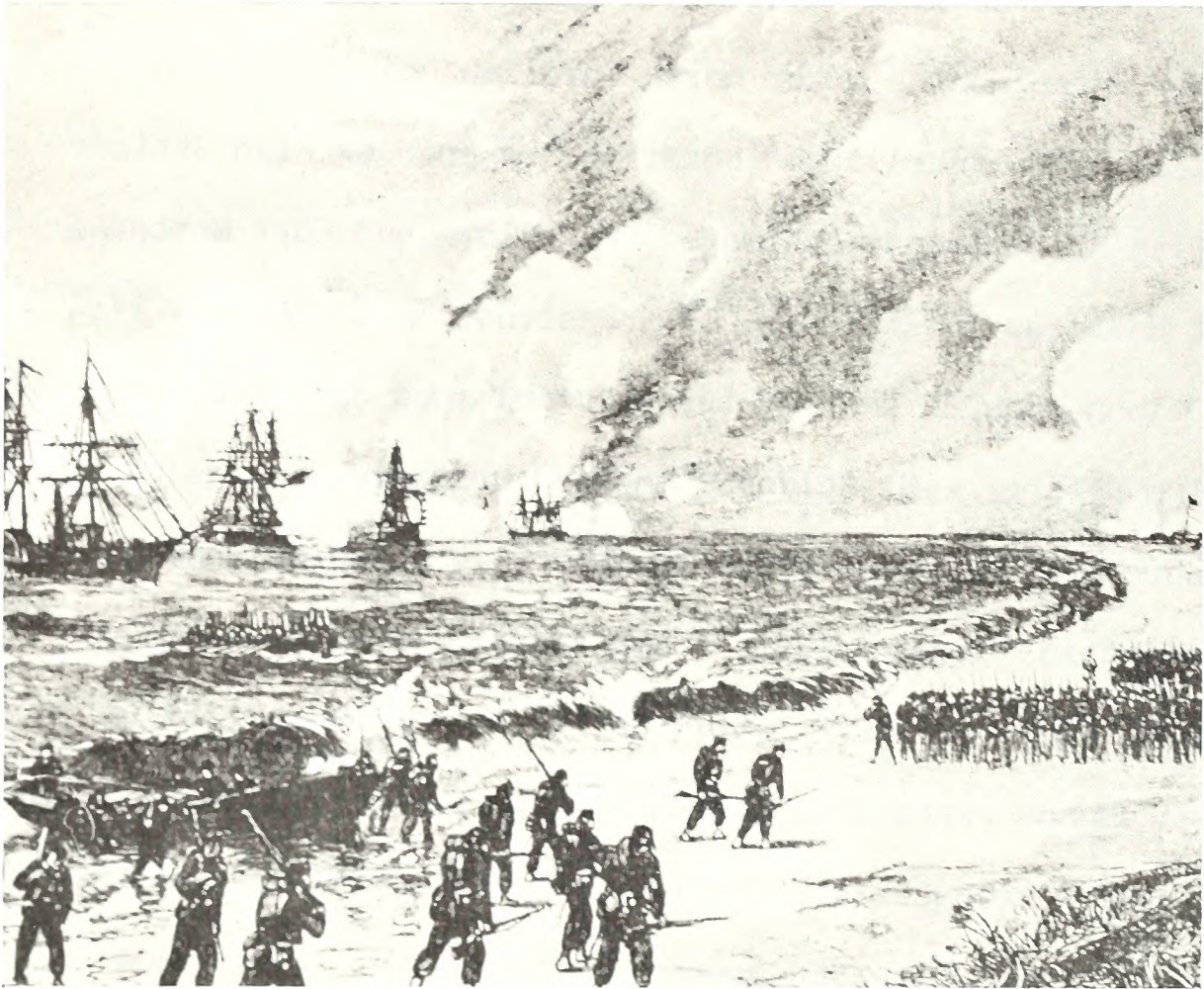


Figure 1. Union attack on Fort Hatteras and Fort Clark
(Stern, The Confederate Navy: A Pictorial History)

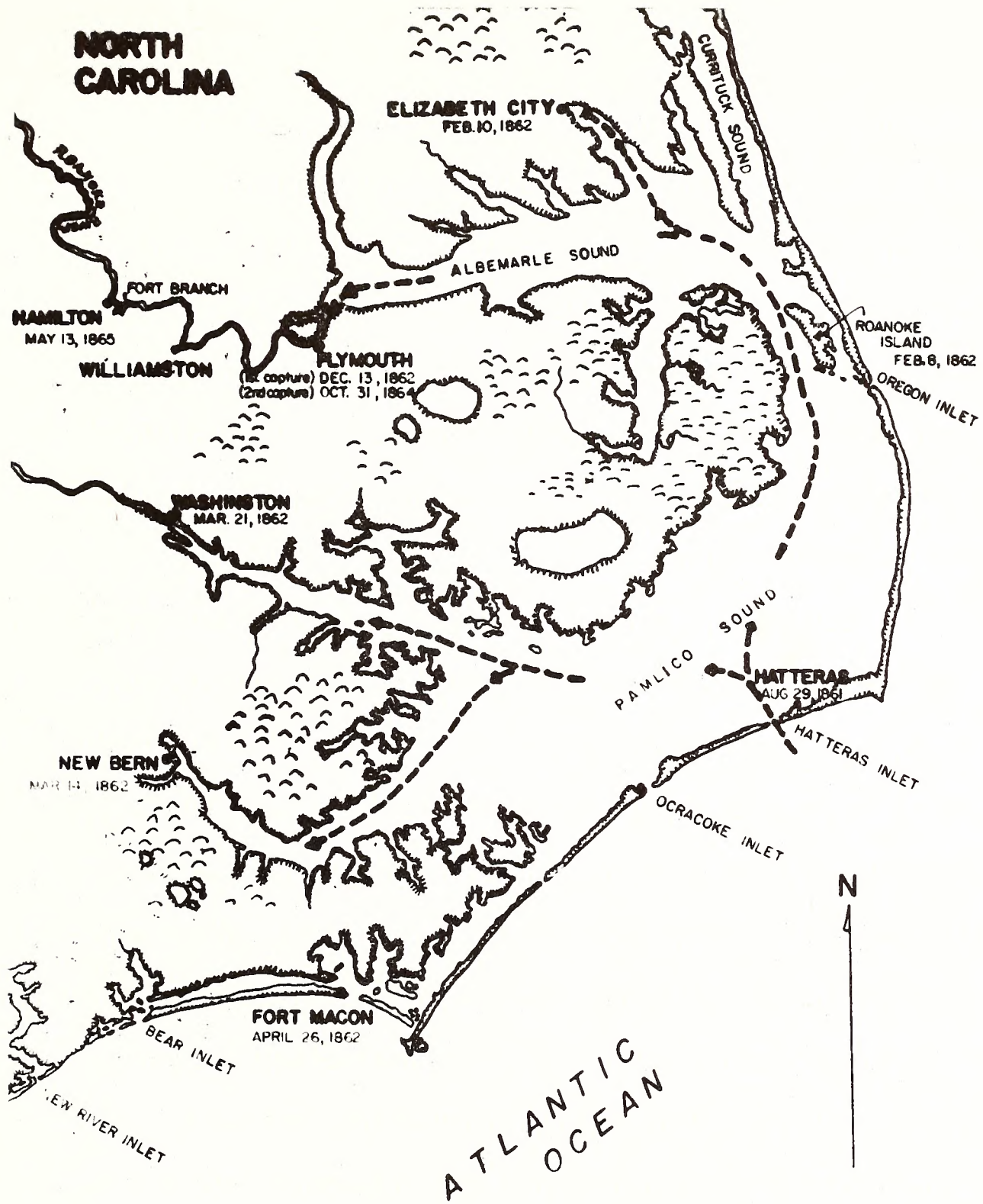


Figure 2. Union invasion of North Carolina sounds, 1861-1865

Leventhorpe, stationed at Rainbow Banks east of the village of Hamilton. Since mid-February the 34th North Carolina Regiment, under Colonel Leventhorpe's command, reinforced by a light artillery battery and small detachment of cavalry, had been assigned to the area to frustrate Union navigation. Local consternation was amplified when Colonel Leventhorpe's garrison was ordered to Goldsboro on March 9, 1862.³

In July 1862, that consternation was justified when a Union expedition was launched from recently occupied Plymouth, North Carolina. Three vessels, the *COMMODORE PERRY*, *SHAWSHEEN*, AND *CERES*, under the command of Lieutenant Charles W. Flusser, were ordered to ascend the Roanoke for the purpose of verifying reports of the construction of defenses at Rainbow Banks. Six miles above Williamston, Flusser's squadron found the river obstructed by a barrage. As the first vessel approached the obstruction, Confederate infantry deployed along the south bank opened fire with small arms. In response Flusser ordered the gunboat crews to return the fire with shot and shell. The barrage quickly dispersed Confederate resistance and permitted Flusser to destroy the obstruction and proceed to Hamilton.⁴

As the flotilla approached Rainbow Banks, it encountered small arms fire from earthworks on the bluff. Flusser concentrated his squadron's fire on the bluff and steamed farther upriver. Little affected by Confederate harassment, the flotilla reached Hamilton on the afternoon of July 9, 1862. As the gunboats were laying off Hamilton, the river steamer WILSON, coming downriver, ran directly into the flotilla and was seized by Union forces.⁵

Although Hamilton could have provided an important base of operations for attacks on railroad facilities in Weldon or the naval yards at Halifax and Edwards Ferry, no effort was made to occupy the town. The following day Flusser ordered the expedition to withdraw. On the trip downriver, Flusser landed a party of Hammel's 9th New York Zouaves in Williamston. Their brief reconnaissance was designed to make Union presence in the area felt. After a brief occupation, the force returned to Plymouth⁶ (Fig. 3).

Lieutenant Flusser's successful navigation of the Roanoke and capture of the steamer WILSON emphasized the necessity for developing fortifications along the river. On September 8, 1862, Brigadier General Samuel C. French informed Confederate Secretary of War George W. Randolph that General Daniel H. Hill was committed to construction of

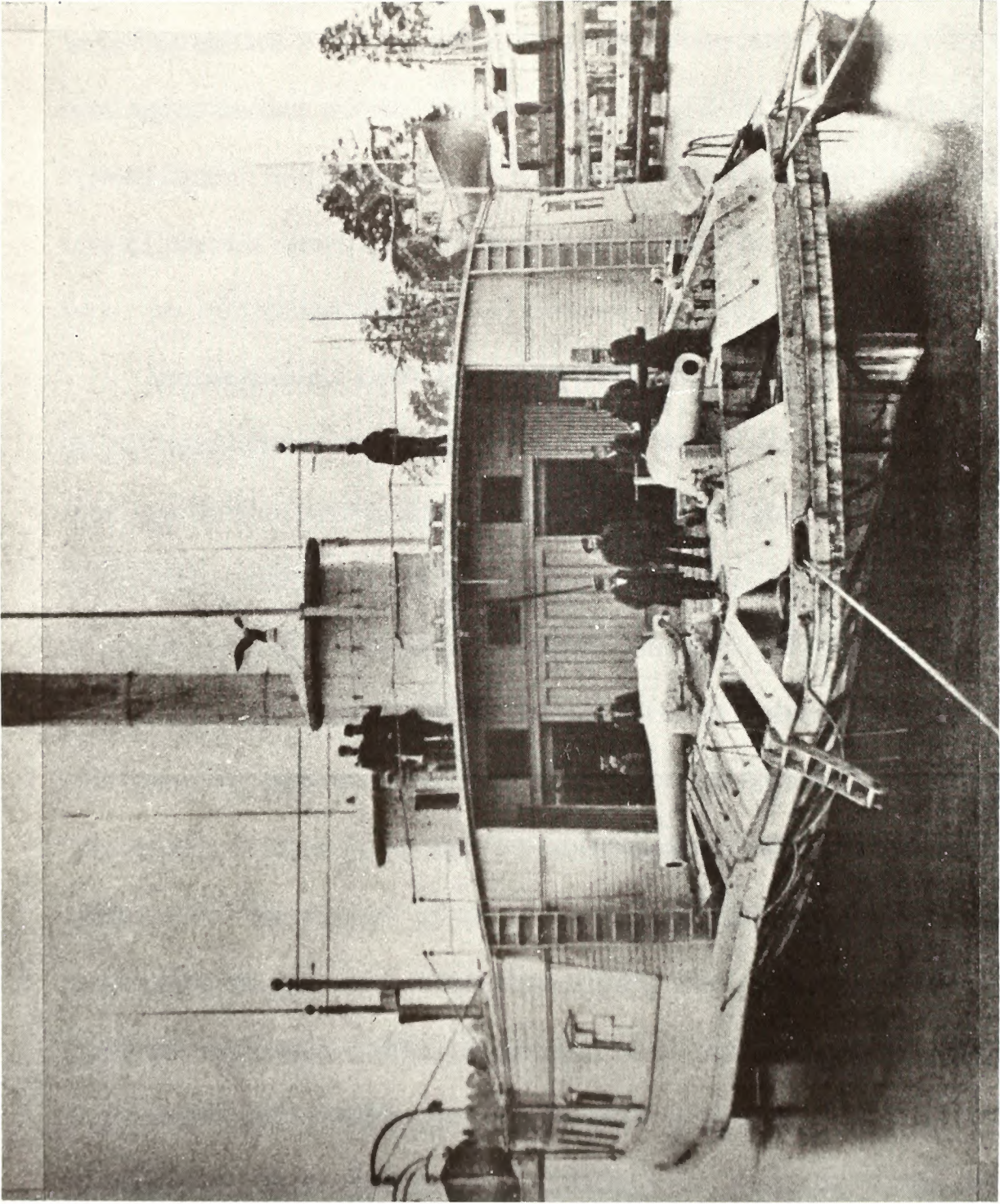


Figure 3. U.S.S. COMMODORE PERRY, which took part in expeditions on the Roanoke River during July 1862. (Pictorial History of the Civil War)

the required fortifications. One month later the Engineer Bureau assigned Colonel Walter Gwynn the responsibility for surveying defensible positions along the rivers of eastern North Carolina. On September 25 Colonel Gwynn ordered Lieutenant James I. Randolph and Mr. Samuel Taylor of the Engineer Corps to make a reconnaissance of the Roanoke and identify defensible positions. Although Lieutenant Randolph identified several acceptable locations for the construction of fortifications, none was "so suitable as Rainbow Bend."⁷ In his report, Lieutenant Randolph described the location as:

. . . an excellent point. It is situated on the Martin side of the river, about three miles below the town of Hamilton to the battery. There is a battery already constructed there, located, I understand by Captain Kidder Mead, C.S. engineer, a sketch of which is enclosed, marked No. 1. The battery is well located, and arranged for five pieces. It is not, however, well constructed. The parapet is not more than 14 feet thick; not enough, in my judgment, to stand heavy artillery at a half-mile range. The soles of the embrasures have not slope enough to admit a sufficient depression of the guns and the magazine, while it is the most conspicuous point in the work as viewed from the river is very weak both on top and at the sides. The flooring of one of the platforms is gone, and the hillside . . . should be cut away farther, as it limits the field of fire of one of the guns.⁸

In spite of the fortification's numerous deficiencies, Lieutenant Randolph indicated that:

Slight labor and time are, however, required to put the work in perfect repair and make the alterations above suggested, as the earth obtained by increasing the slope of the soles of the embarasures and the necessary scraping of the hillside would furnish sufficient material to strengthen⁹ both the parapet and the magazine.

He furthermore recommended that:

. . . an obstruction in the river is indispensable to complete defenses; for the whole field of fire, being less than three-quarters mile, an ironclad boat might in a few moments run above, take the battery in reverse and hold it at its mercy, as there are no guns facing up the river and no traverses in the rear of the batteries.¹⁰

According to his calculations the obstructions should be placed approximately 200 yards downstream from the battery.

This would be in full fire of the battery, and all along the bluff above sharpshooters, perfectly protected, could lie and prevent any attempt to remove the obstructions. At that point, too there is a bar, thereby making obstructions easier. The obstruction could best be made by piling. There are no old craft lying in the river . . . and pens cannot be used, as there is no stone or gravel . . . there is no pile driver on the river, but I suppose the essential parts of one might be brought from Richmond by rail.¹¹

To defend the fortifications against land assault Lieutenant Randolph proposed a

. . . line of rifle pits extending from the river to Coniho Swamp and another short line . . . to prevent a passage through Hamilton to the rear.¹²

By October 20, 1862, Colonel Gwynn had been given authority to organize a Negro labor force and employ the necessary supervisors for constructing the defenses. Ten days later plans for the earthworks were approved and a work force of 100 Negroes had been assembled in Hamilton. According to orders from the Engineer Bureau in Richmond, Colonel Gwynn took immediate steps to initiate construction.¹³

Strengthening and reconstruction of the defenses at Rainbow Banks had been under way for less than two weeks when a Union expedition, organized by Major General John G. Foster, departed New Bern. On November 1, Foster's three brigades, comprised of infantry, cavalry, and light artillery, arrived in Washington, North Carolina. While unable to accomplish their original objective of capturing or destroying three Confederate regiments foraging in the area, the expedition easily forced its way to Williamston. On November 3, they were joined by a small flotilla of gunboats. After bivouacking for the night some five miles outside Williamston, Foster's brigades and the gunboats

arrived in Hamilton the following day.¹⁴

On November 5 the gunboat I.N. SEYMOUR was dispatched to Rainbow Banks to destroy the fortifications that had been hastily abandoned by Colonel Gwynn's work force. The magazine was blown up and the gun platforms and timber facings of the curtain and embrasures were ripped up or burned. Before demolition of the fortifications could be completed, careless handling of the explosives caused an accident that killed one soldier and wounded several others.¹⁵

The expedition returned to Hamilton after the demolition work was abandoned, and an unsuccessful attempt was made to reach Tarboro on November 6; but no additional effort was made to reduce further the earthworks at Rainbow Banks. On November 8, Foster placed approximately 300 sick and wounded on the gunboats and withdrew to Williamston after "the town of Hamilton was sacked and a good part of it burned . . . ". After spending a night in Williamston during which "five houses were burned and nearly all of the cattle, hogs and poultry in town and vicinity were killed," the expedition retreated to Plymouth and boarded transports for New Bern.¹⁶ Even without the protests of angry citizens, General Foster's virtually unopposed activity made Confederate military authorities aware of the glaring strategic necessity

for adequately defending the Roanoke.

At the same time that Union transports were returning to New Bern with Foster's brigades, Confederate engineers were redoubling their efforts to complete the Rainbow Banks fortification. In December, 102 laborers, five overseers, a clerk, and at least two engineers were employed at the site. By January 1863, an additional 56 laborers had been recruited to assist in pushing the work to completion. In addition, the 17th North Carolina Regiment, under the command of Colonel William F. Martin, and a battery of six guns had been stationed in the area. With concerted effort the fortification was completed in approximately two months. On February 9, 1863, North Carolina Militia Brigadier General David Clark was able to inform his son that "the Fort on Rain Bend Bank is finished."¹⁷

While Confederate assaults on Plymouth and Washington in March and April 1863 temporarily relieved the threat of attack on the newly constructed fortification, the Federal occupation of Plymouth demanded that the position be defensible. By May 13, Fort Branch had been improved to the point that Brigadier General J.G. Martin could report:

I examined Fort Branch yesterday and feel satisfied, if properly garrisoned and provisioned, it can repel any attack

of the enemy by land or water less than a regular siege. The supply of ammunition is good, and provisions for 1,000 men for thirty days are being placed in as rapidly as present circumstances permit. Coniho Creek, of which the general spoke to me, will be a serious obstacle to a land attack on Fort Branch. The three roads crossing it near and below the fort are being effectively impeded. One of them has been closed entirely and the bridge destroyed. At one of the others entrenchments have been prepared and at the third are being prepared.¹⁸

Three days later General Martin reported that he was immediately moving his headquarters to Hamilton to frustrate a rumored Union advance from Plymouth. For Martin the fact that the attack did not materialize was something of a blessing. On June 16, he informed Major General D.H. Hill:

The four field pieces have arrived and are mounted . . . Captain Ellis has not arrived. None of the unattached companies . . . in fact, all raised by orders of the Governor in the counties of Washington, Beaufort, and Hyde . . . have, with the prospect of getting into real service, disbanded. Captains Spencer and Livinale, one from Beaufort the other from Hyde, were here a week ago, and informed me that they could not get their companies out of the lines; at any rate, not at this time. They hoped to do so after the crops were laid by. . .¹⁹

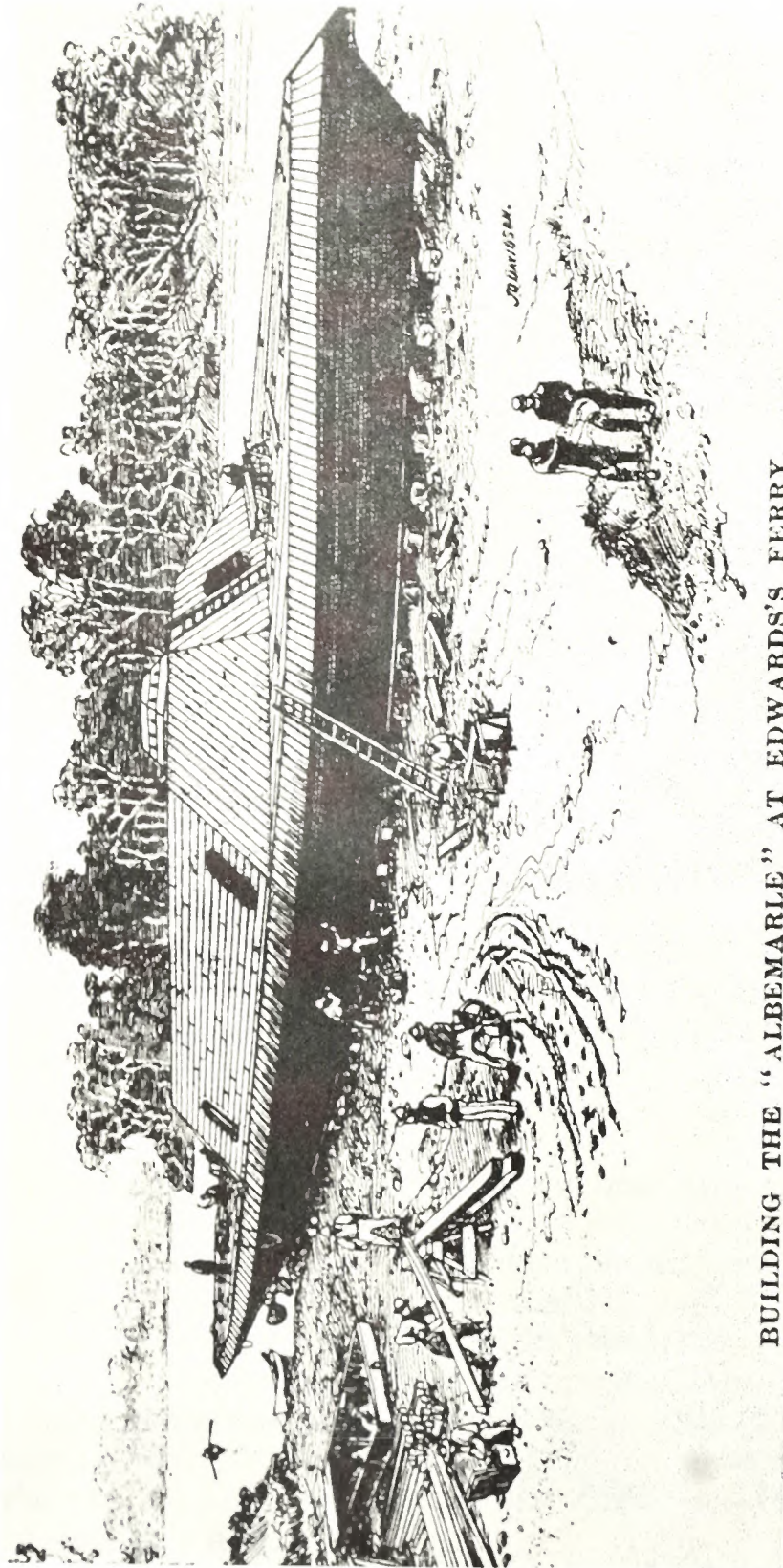
Perhaps to end the communication on a more positive note, the general added:

The wood-work for the obstructions in the river is all complete. The engineer heard day before yesterday that the chain

was at Halifax, and has gone there for it.²⁰

Information supplied by Confederate deserters from the Hamilton area indicated that by August, 1863, Fort Branch contained a 32-pounder smoothbore in embrasures commanding the river. A third 24-pounder smoothbore, two 12-pounder and three 6-pounder field pieces were deployed to defend the land approaches to the fortification. Captain Edward Graham's Petersburg Artillery, comprised of five additional pieces, was stationed in Hamilton. In addition to three companies assigned to garrison the fort, the 17th North Carolina Infantry and the 56th North Carolina Infantry were encamped in the immediate vicinity. Rumors also indicated that a floating battery under construction at Edwards Ferry was to be stationed at Rainbow Banks (Fig. 4)²¹

Troop strength at Fort Branch could not be maintained at this level indefinitely, and by October, demands for reinforcements in Virginia and Wilmington required that all but a small garrison be transferred. In December, Fort Branch was occupied by thirteen officers and 123 men of the 1st North Carolina Artillery. Although troop strength was minimal during the fall of 1863 and winter of 1864, a sketch of Fort Branch prepared by Lieutenant Colonel Henry T. Guion indicated that ordnance had been increased to eleven guns.



BUILDING THE "ALBEMARLE" AT EDWARDS'S FERRY.

Figure 4. (London Illustrated News)

This was apparently more than sufficient to defend the Roanoke while a Confederate offensive against New Bern occupied Union attention. After Plymouth was recaptured by Brigadier General Robert F. Hoke and the Union garrison evacuated Washington in April, the defensive role of Fort Branch was minimized by the presence of the powerful Confederate ironclad ALBEMARLE downriver on the Roanoke, and only a token garrison was maintained.²²

The situation on the Roanoke continued virtually without change until the fall of 1864. On October 27, Lieutenant William B. Cushing succeeded in sinking the ALBEMARLE (Fig. 5).²³ Without naval support provided by the ironclad, Confederate defenses at Plymouth had to be abandoned. Four days later the town was again in Union control.

One month later on November 28, 1864, Rear Admiral David Dixon Porter informed Major General Benjamin F. Butler of the advantages to be realized from a combined army and navy expedition to destroy Fort Branch and an ironclad under construction at the Confederate Navy Yard at Halifax, North Carolina. General Butler's concurrence was transmitted with orders for Brigadier General I.N. Palmer to cooperate in the attack on November 30, 1864.

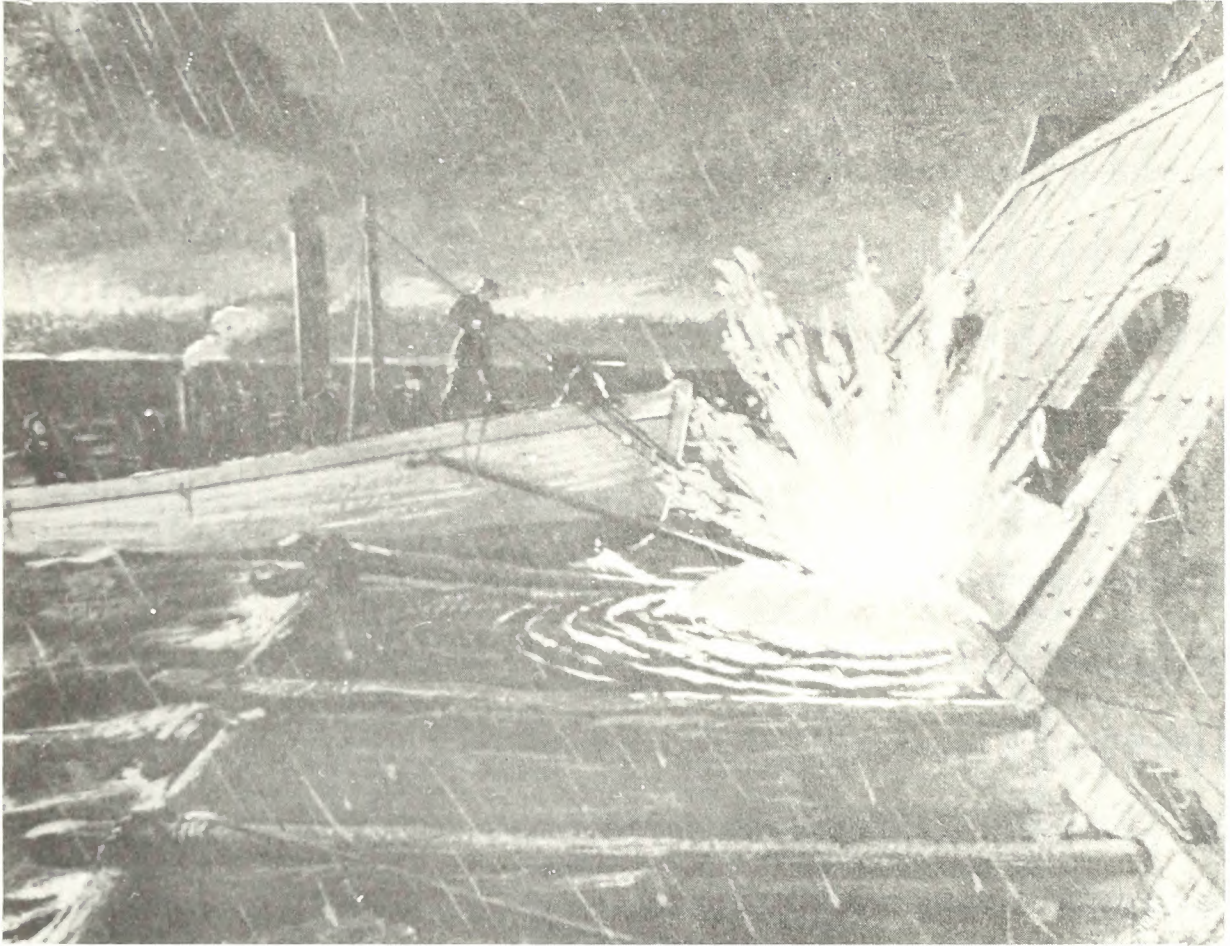


Figure 5. Lt. William B. Cushing destroyed the Confederate ironclad ALBEMARLE which had provided critical naval support in the vicinity of Plymouth. (Civil War Naval Chronology)

The following day Admiral Porter ordered Commander W.H. Macomb to assist the army in destroying Fort Branch and the ironclad at Halifax.²⁴

Commander Macomb's vessels departed Plymouth on December 9, 1864. Immediately below Jamesville the OTSEGO struck Confederate torpedoes and sank in less than five minutes. The following morning the tug BAZELY struck another torpedo and sank in the vicinity of the OTSEGO (Fig. 6). To complicate matters, the COMMODORE HULL suffered a boiler accident and was forced to return to Plymouth. The necessity of dragging for torpedoes reduced progress to approximately five miles per day. According to the calculations of Acting Assistant Surgeon John M. Batten of the steamer VALLEY CITY, eighty torpedoes were located and exploded in thirty miles of river between Jamesville and Poplar Point. In spite of marines assigned the duty of clearing the banks of snipers, Confederate sharpshooters complicated the dragging operations and several crew members of the drag boats were wounded or killed.²⁵

The army expedition under the command of Colonel Jones Frankle suffered similar problems with Confederate resistance. Several skirmishes and five days of marching in severe weather left half of the men sick or wounded. Under

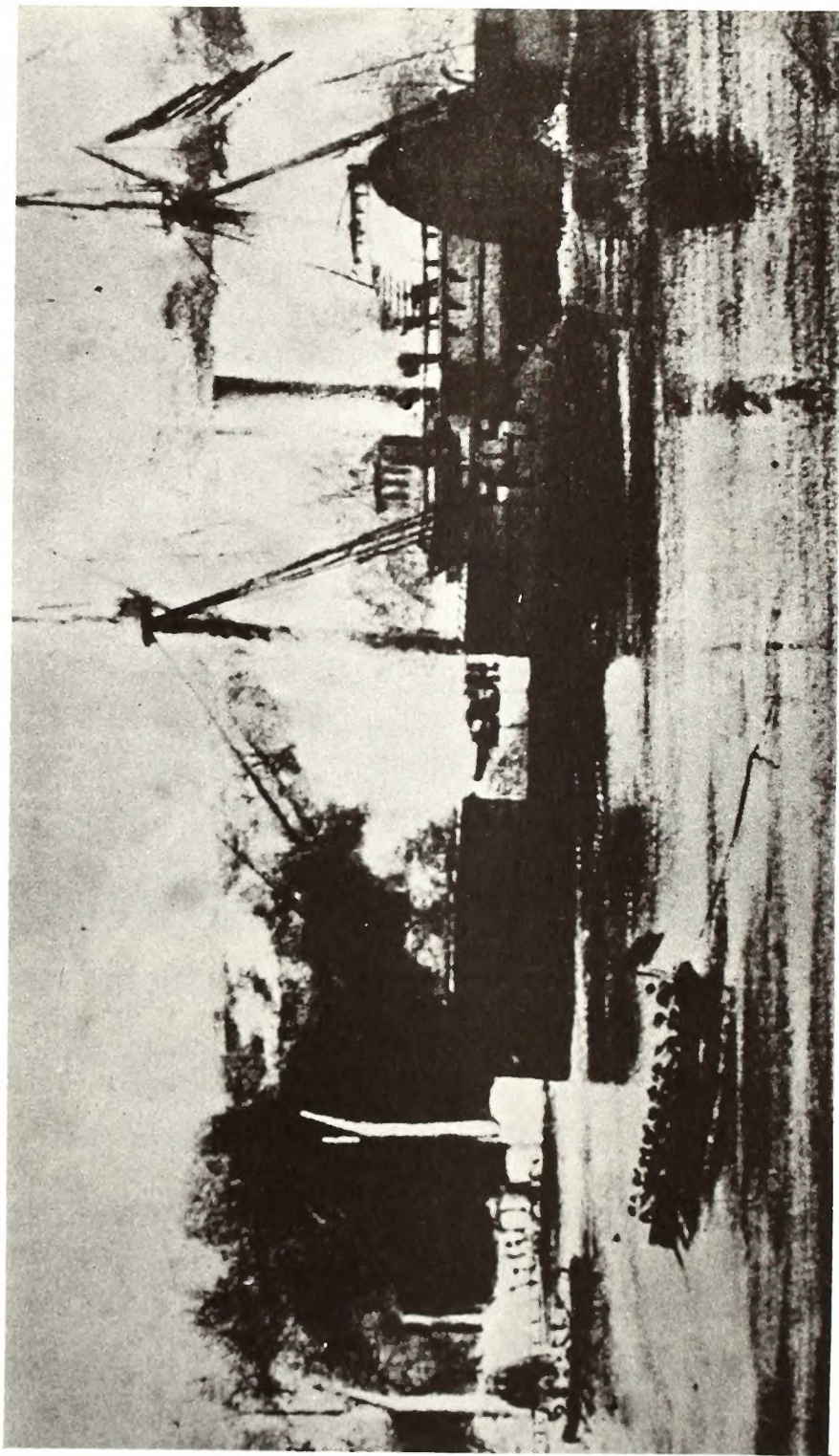


Figure 6. Loss of the BAZLEY and OTSEGO (Civil War Naval Chronology)

the adverse circumstances, Colonel Frankle elected to return to Plymouth.²⁶

Although the gunboat flotilla succeeded in reaching a point some eight miles below Fort Branch, increased sharpshooting made navigation extremely hazardous. Without adequate army support along the banks it was impossible to continue the torpedo-dredging operations. An attack on Fort Branch without army support was folly, Commander Macomb also abandoned the expedition and returned to Plymouth.²⁷

The Union occupation of Plymouth and the unsuccessful attack on Fort Branch stimulated considerable interest in increasing the garrison and troop strength in the general area. After the fall of Plymouth, two companies of the 1st North Carolina Artillery retreated to Fort Branch. A third company of the 1st North Carolina Artillery were recalled from Fort Clifton, Virginia. An Alabama Artillery Battery and several companies of the 6th North Carolina Cavalry also retired to Fort Branch.²⁸

By the spring of 1865, Confederate hope for carrying succession by force of arms had faded. In North Carolina, military operations resembled little more than organized resistance. All available Confederate strength was being

concentrated under the command of General Joseph E. Johnson in an effort to halt the advance of General William T. Sherman (Fig. 7). When it was apparent that continued defenses was futile, the garrison at Fort Branch began preparations for withdrawal.

To ensure that Fort Branch would be of little service to the Union, the magazine was blown up and the commissary destroyed. Ordnance and supplies that had been removed from the fortification were pushed over the bluff and into the river. Companies A and F of the 6th North Carolina Calvary then retired to Weldon. The battalion of 1st North Carolina Artillery under the command of Colonel Stephen D. Pool withdrew along with the Montgomery True Blues to join Brigadier General Lawrence S. Baker at Ridgeway, Virginia.²⁹

News of the withdrawal reached Commander Macomb in Plymouth quickly and on April 13, he was able to report:

I have information from many different sources which seem too strongly corroborated to be false, that the rebels have evacuated Weldon, burning the bridge, destroying the ram at Edwards Ferry and throwing the guns at Rainbow Bluff into the river.³⁰

The following day Lieutenant Commander James S. Thornton arrived at Fort Branch with the gunboat ISOCO. In reports of the reconnaissance, Lieutenant Commander

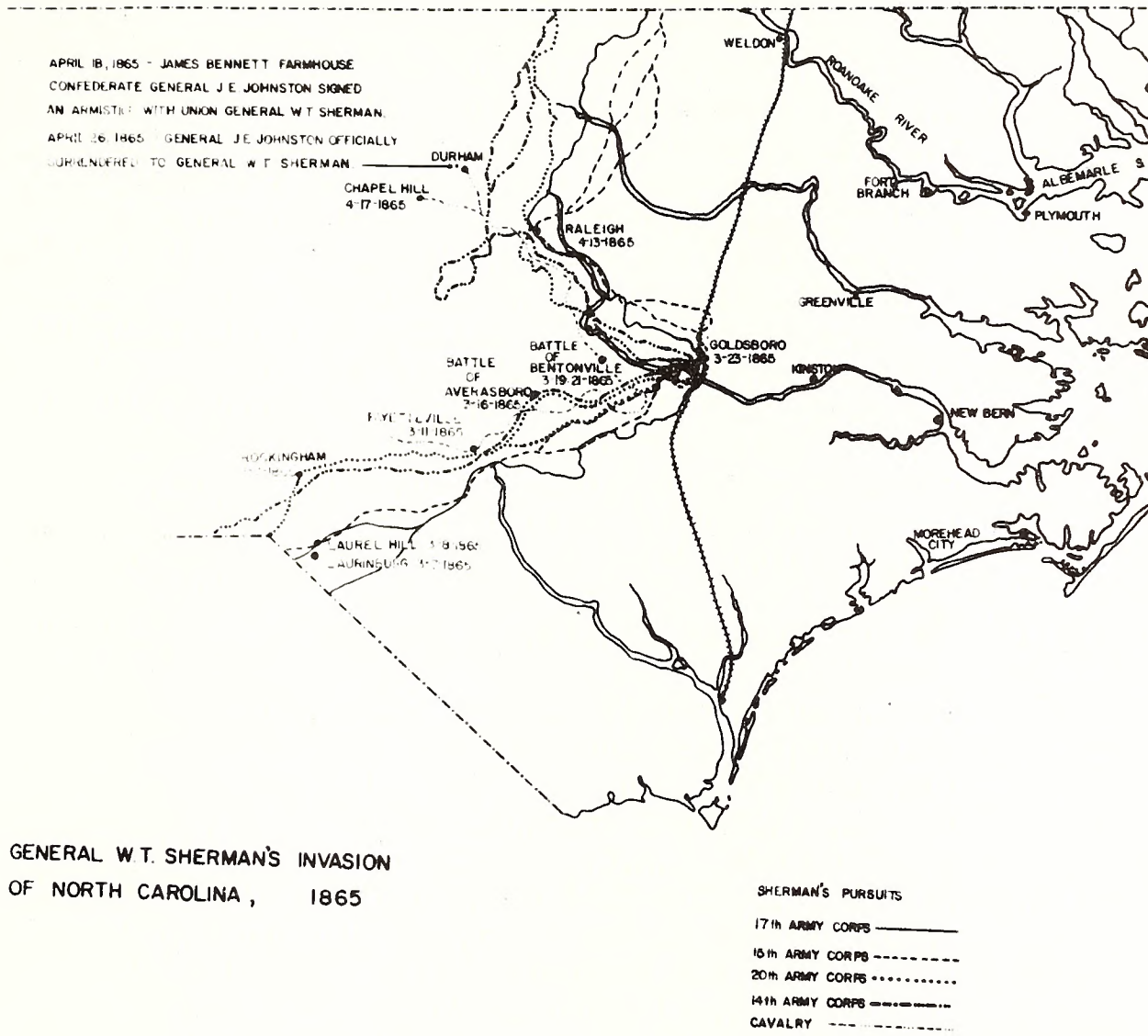


Figure 7.

Thornton stated:

I can find thus far but three guns; they are sunk under the embrasures from which they were thrown. The others have launched out into deep water, and if sunk in the mud, will, I think, never be recovered; if not, the sweeping line may find them. There were originally fourteen or fifteen guns of all classes in the fort; two were burst, one of which was a 32-pounder; one, a Blakely, carried to Weldon; one 12-pounder, carried away by Captain Lee; one 12-pounder, sent to Plymouth; leaving nine or ten in the river, three of which I think can be raised.³¹

The following day Thornton continued:

I have succeeded in raising three guns this morning bearing the following marks, viz, one rifle-gun, 6 inch caliber, C.W.S., 1852; one smoothbore 32-pounder, 5,522 pounds, J.M.C.E., 1829; one smoothbore . . . , J.R.A. & Co., 1851. . . in regard to the number of guns in the fort I find that the accounts differ from five to seventeen. I have finally come to the conclusion that ten guns of all classes battered the works, five of which were heavy guns, the others light guns mounted on field carriages. Of the heavy guns, two were burst, two I have secured, and the other, a Blakely rifle, has been carried to Weldon. Of the light guns, one was taken off by Captain Lee when he evacuated, two I have secured and the other may be sunk in the river, or may be carried off for aught I can tell . . .³²

Finding that the fortification contained little salvageable material and represented no threat to security, Commander Thornton withdrew.

NOTES

¹United States Office of Naval Records and Library, Official Records of the Union and Confederate Navies in the War of the Rebellion, Series 1, Washington, D.C.: Government Printing Office, (Vol. 6, 31 vols., 1894-1927), p. 119 (hereinafter cited as ORN); United States War Department, The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies, Series 1, Washington, D.C.: Government Printing Office, (Vol. 4, 70 vols., 1881-1901), p. 579 (hereinafter cited as ORA).

²ORA, Series 1, Vol. 9, p. 87.

³Ralph W. Donnelly, "Fort Branch, Keystone of the Roanoke Valley," typewritten (Washington, N.C., 1975), p. 1 (hereinafter cited as Donnelly, Fort Branch).

⁴ORN, Series 1, Vol. 7, pp. 556-557.

⁵Ibid.

⁶Ibid.

⁷Ibid, Series 1, Vol. 8, p. 185.

⁸Ibid.

⁹Ibid.

¹⁰Ibid.

¹¹Ibid., pp. 185-187.

¹²Ibid., p. 187.

¹³ORA, Series 1, Vol. 18, p. 763.

¹⁴ORN, Series 1, Vol. 8, pp. 188-190.

¹⁵Ibid.

¹⁶Ibid., p. 185; Donnelly, Fort Branch, p. 19; James H. McCallum, Martin County During the Civil War (Williamston, N.C.: Martin County Historical Society, 1971), pp. 106-107.

¹⁷Donnelly, Fort Branch, p. 21.

¹⁸ORA, Series 1, Vol. 18, p. 1060.

¹⁹Ibid., Series 1, Vol. 27, part 3, p. 899.

²⁰Ibid., p. 900.

²¹Donnelly, Fort Branch, p. 26.

²²Ibid., pp. 26-27.

²³U.S. Naval Records Collections of the Office of Naval Records and Library, Record Group 45, Journal of Vessels of U.S. Navy: Lt. Com. William Cushing, May 1861 - Feb. 1865. (Washington, D.C.: National Archives and Records Services, 1971), p. 63.

²⁴ORN, Series 1, Vol. 11, p. 163.

²⁵Ibid., pp. 161-164.

²⁶Ibid., pp. 166, 170-171.

²⁷Ibid., pp. 176-181.

²⁸Donnelly, Fort Branch, pp. 32-33.

²⁹Ibid., p. 33.

³⁰ORN, Series 1, Vol. 12, p. 116.

³¹Ibid., p. 150.

³²Ibid., pp. 150-151.

DESCRIPTION OF SITE

Fort Branch is located on the south bank of the Roanoke River in Martin County, North Carolina. The fort is 59 miles upstream from the mouth of the river and 3 miles downstream from Hamilton, the nearest town to the fort. Latitudinal and longitudinal coordinates for the fort are $35^{\circ} 55' 49''$ North and $77^{\circ} 10' 18''$ West. Access to Fort Branch may currently be gained by traveling east on county road 1416, 1.8 miles from its origin at state highway 125/903. From there a paved county road, 1432, leads .2 miles north ending in the parking area adjacent to the western face of the fort (Fig. 8).

Built on a high bluff some seventy feet above the river, Fort Branch was designed and situated to prevent Union gunboats from traveling farther up the Roanoke. According to a map made in 1864 by Lieutenant Colonel H.T. Guion, there were four guns mounted along the river face, two 24-pounders and two 32-pounders (Fig. 9). From the time an enemy vessel first came in view of the fort, almost a half mile downstream, it would be in range of these cannon on the river face. It would be extremely difficult, however, for the crew aboard an approaching vessel to elevate their guns sufficiently to fire on the fort.



Figure 8. Location of Fort Branch

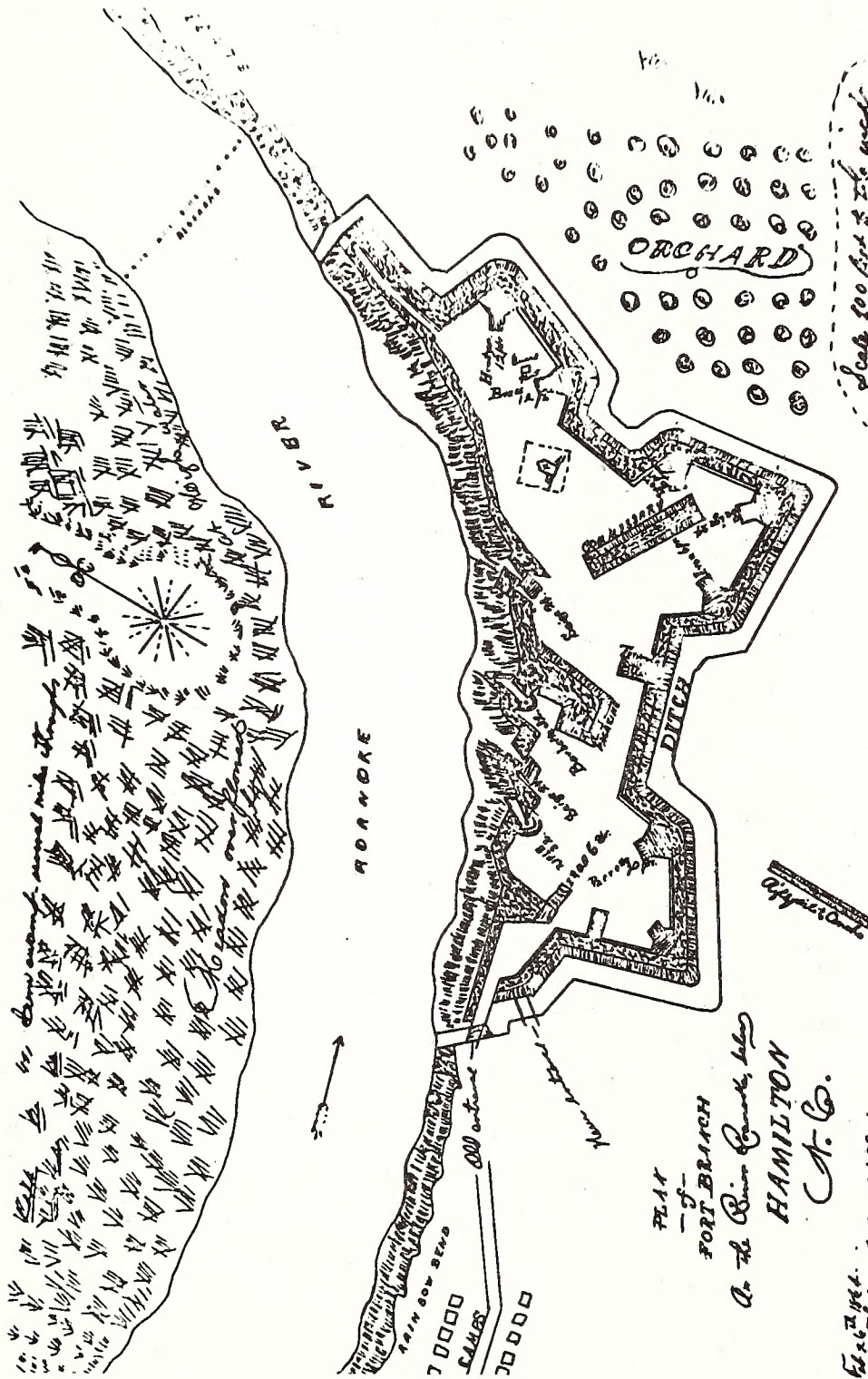


Figure 9. Lt. Col. Guion's 1864 map of Fort Branch (courtesy of North Carolina State Archives)

Although built as a river defense, Fort Branch was also designed to withstand a land assault. Three connected lunettes, fortified positions with two faces and two flanks, jutted inland from the river face and were positioned to provide a maximum field of coverage in all directions in the event of a land attack. According to Guion's map, a total of seven guns were mounted in these lunettes ranging in size from 6-pounder iron field pieces to a 4.62-inch rifle. With the exception of the two 32-pounders on the river face that were mounted on barbette carriages, all the guns in Fort Branch were mounted on either field or siege and garrison carriages, depending upon their size. These guns and carriages were placed on raised earthen platforms, or terrepleins, from which they could be fired over the parapet.

There are four other structures shown on the Guion map that were integral parts of the fort. First, was a magazine located between the two easternmost guns on the river face. Second, was a traverse running from the land face toward the magazine that effectively cut the fort in half. The third major structure was a commissary situated in the vicinity of the middle lunette. Finally, Guion's map shows a line of rifle pits running from the fort in a southerly direction to

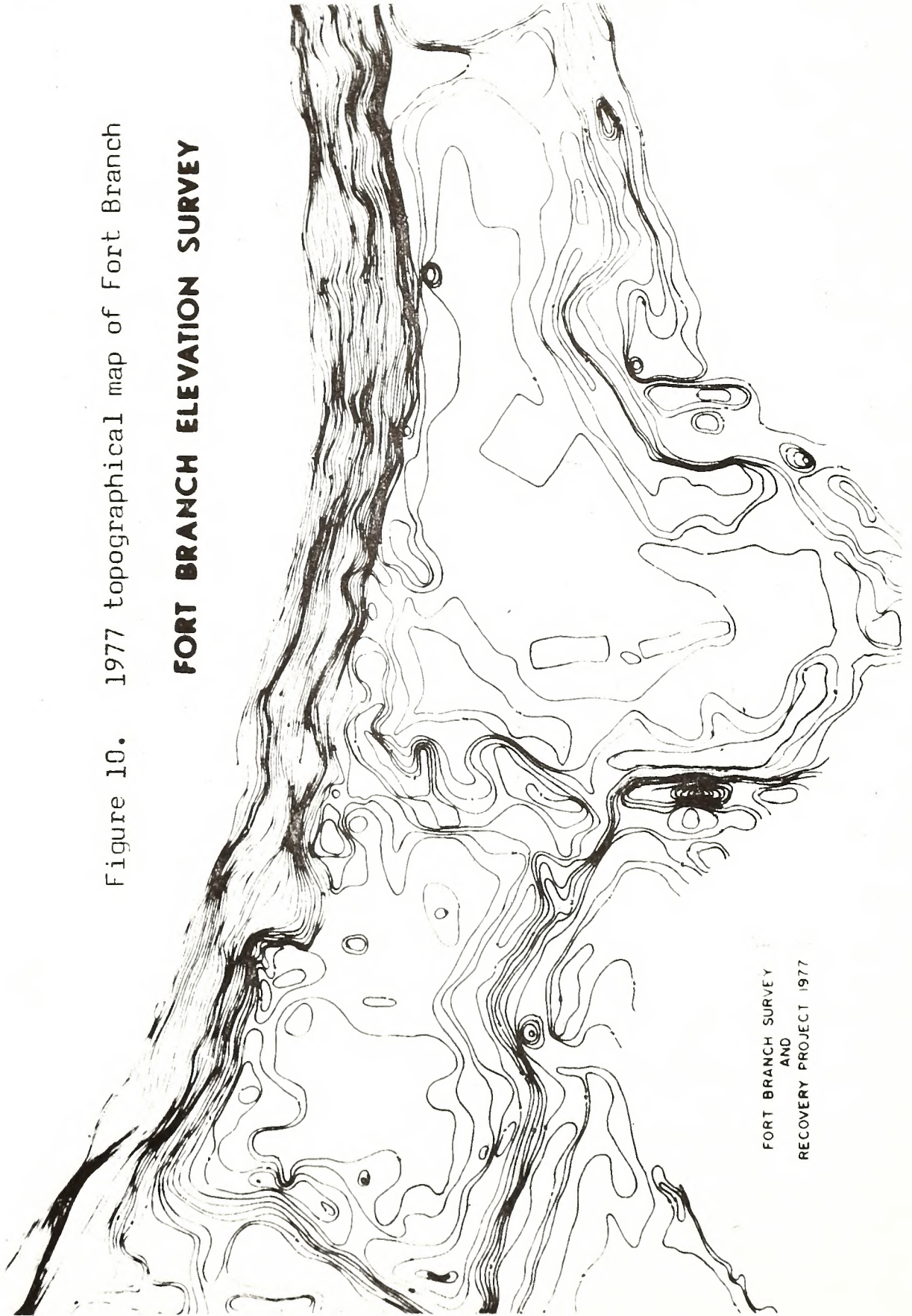
Conoho Creek almost a mile away.

With the exception of some erosion of the river face, particularly along the eastern half, and minimal damage due to foot traffic, the earthworks at Fort Branch exist today in an excellent state of preservation (Fig. 10). The average height of the parapet above the interior ground level varies from 4 feet along the river face to 7 feet along the land face. The ditch surrounding the parapet exists today with an average depth of 10 feet below ground level, having served both as a part of the defenses and as a source of dirt for the construction of the parapet. The locations of the gun emplacements are still clearly evident in the fort and the magnetometer survey conducted during the project indicates that portions of the gun platforms may still be present in at least one of the emplacements on the river face (Fig. 11).

In the area of the fort shown as the magazine an earthen mound is present. This mound measures 40 feet by 60 feet and is 8 feet in height. Along the western edge of this mound is a circular depression 8 feet in diameter filled with standing water of unknown depth. The area shown on Guion's map as the commissary today contains an elongated depression 10 feet by 130 feet running in a southeast to

Figure 10. 1977 topographical map of Fort Branch

FORT BRANCH ELEVATION SURVEY



FORT BRANCH SURVEY
AND
RECOVERY PROJECT 1977

FORT BRANCH MAGNETOMETER SURVEY



Figure 11. 1977 Magnetometer survey map of Fort Branch

northwest orientation. The bottom of this depression averages 2 feet below the interior ground level. As in the case of the gun emplacements, the magnetometer survey indicates the presence of additional material below ground in this depression. The traverse shown on the 1864 map is still intact today as is a portion of the rifle pits that ran from the fort to Conoho Creek. The raised earthen embankment of the rifle pits is 2 feet above the existing ground level with only the 180 feet nearest the fort remaining, the rest having been destroyed in the cultivation of the land adjacent to the fort.

There are approximately $3 \frac{1}{3}$ acres contained within the earthen walls of Fort Branch (Fig. 12). Though this area was undoubtedly cleared during the Civil War, the interior of the fort now contains a number of large pine trees. Today, access into the fort is by way of a wooden foot bridge that enters at the western face of the western lunette. The only other major feature existing within the fort is the remains of a small cemetery that reportedly predates the Civil War. The fort is currently bordered by cultivated fields and pine forest.

The bluff upon which Fort Branch was constructed consists of a massive outcropping of a late Miocene marine



Figure 12. Interior of present-day Fort Branch

clay of the Yorktown Formation. The natural bluish gray color of this clay is quite evident along the lower portions of the bank that have been recently eroded by the river. However, where the clay has been exposed to the air for a prolonged period of time the soil has oxidized to a yellow color. Along portions of the bank where water is seeping out of the formation, multihued stains have resulted. The colors of these stains have led to this bluff being called Rainbow Banks or Rainbow Bluff, a usage that predates the Civil War and continues to present day (Fig. 13).

From the top of the parapet on the river face to the bottom of the river is a distance of 85 feet, and the slope of the bank drops an average of 7 feet for every 6 feet out. Located on the outside edge of a major curve in the Roanoke River, the bank at Fort Branch is continuously subjected to lateral erosion by the river current. Several yards of the eastern half of the river face of the fort have sloughed off into the river as a result of this erosion process. Vegetation is quite heavy on the bank above the high-water line except in areas where the bank has recently eroded into the river. The vegetation is a combination of upland and lowland shrubbery understory depending on the elevation above the water.



Figure 13. Perspective view of Rainbow Banks

On the Fort Branch side of the river the steep slope of the bank continues down through the water to a depth of 18 feet (Fig. 14). The submerged slope is a continuation of the blue Miocene clay. At the 18-foot contour the river bottom levels out and consists of a clay bottom covered with a layer of silt sediment. Along this portion of the bottom are found a number of trees and snags that have washed into the river, become water logged, and sunk. During periods of high water the bottom is scoured of this sediment and the trees and snags are washed downstream. As the river subsides, sediment and snags from farther upstream settle to the bottom to replace those washed away. Moving in a northerly direction across the river, the bottom gradually rises and is composed of a coarse sand. This gentle rise continues to the north bank where the sand eventually gives out and is replaced by a thick layer of viscous mud. The northern side of the river is quite low and is subject to flooding during periods of high water. The soil on this side of the river consists of a thick deposit of river sediment and is covered with a heavy growth of vegetation. This area is classified as a palustrian gum and cypress forest.

The Roanoke River at Fort Branch, 76 miles downstream

PROFILE OF ROANOKE RIVER AT FORT BRANCH

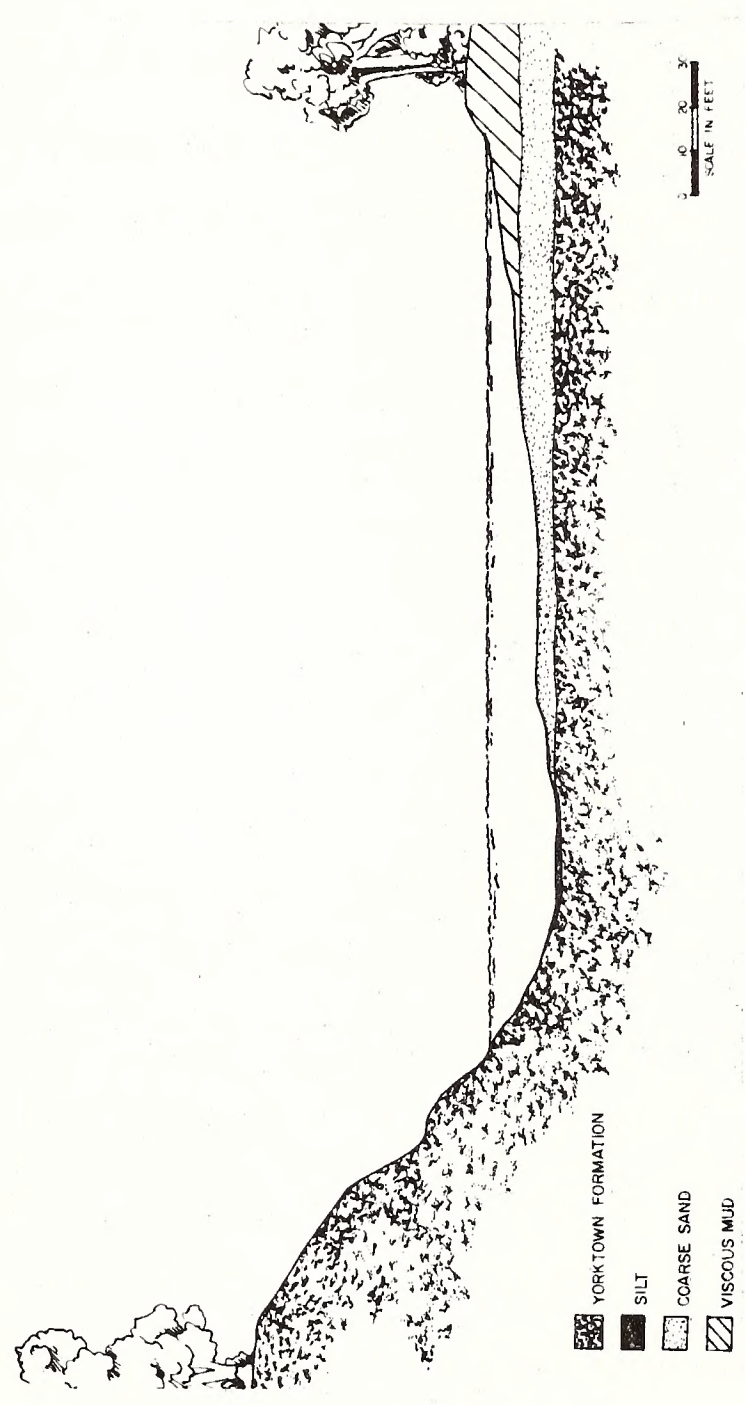


Figure 14.

of the fall line at Roanoke Rapids, is 200 feet wide and 18 feet deep in the channel. Although a series of dams on the Roanoke have done much to control the flow of water, there is considerable fluctuation in river level and current. At Fort Branch this seasonal variation can range from 6 feet below average during the summer to 8 feet above average in late winter and spring. Likewise the current varies from 1.5 to 3 knots.

The water of the Roanoke River at Fort Branch contains a large amount of suspended particulate matter. This results in poor visibility on the river bottom varying from 0 to 6 inches even with the use of an external light source. Water sample analysis conducted by the Water Quality Section of the North Carolina Department of Natural Resources and Community Development confirms the high level of residual material in the water as well as the river's turbidity. These studies also indicate a complete lack of salinity in the water samples. This absence of dissolved salts combined with the low light levels and protective bottom sediments make the Roanoke River an ideal location for the preservation of cultural material.

PREVIOUS WORK

With the exception of the activities of Martin County Game Warden John W. Hines, who reportedly recovered an assortment of projectiles and a small cannon from the fort in 1932, little interest in either the earthworks or the material in the river developed until the Civil War Centennial celebration. In 1961, preservation-conscious citizens in Martin County began to explore the possibility of developing the Rainbow Banks fortification as an historic site. With assistance from the North Carolina Division of Archives and History, an investigation and assessment of the site was made and recommendations for protection and development were formulated. To sponsor and direct preservation activities, the Fort Branch Battle-ground Association was incorporated.

As a result of the Association's activities, a lease agreement was negotiated with the owners of the fortification and the land was cleared to facilitate public access. With assistance from the Department of Transportation, vehicle access and parking were improved. Arrangements were made for the Division of Archives and History to help with research, technical assistance, the development of educational programs, and securing funding support. To prevent

unauthorized activity or looting, the Martin County Sheriff's Department agreed to maintain surveillance.

Although development of the fortification was brought to the attention of the North Carolina Legislature as part of a bill supporting archaeology and historic preservation, interest and support outside the immediate area waned after the Civil War Centennial celebration ended in 1965. With the exception of occasional visits to the site by personnel from the Division of Archives and History and Martin County Economic Development Commission Executive Director, Percy A. Price, activity related to the site was oriented toward controlling sporadic looting and vandalism. By 1971, unauthorized artifact collecting at Fort Branch had increased considerably. In August, 1971, marines from Camp Lejeune, North Carolina, attracted the attention of collectors when accounts of their metal detecting and diving activities were featured in a Jacksonville, North Carolina newspaper.

During June, 1972, Alabama-based divers and relic collectors launched an extensive search and salvage operation in the river adjacent to Fort Branch. Their activity produced a collection of several hundred shot and shell ranging in size from 6 to more than 100 pounds. In addition, remains, first thought to be limbers or ammunition

carts, were found to be carriage mounted cannon. Realizing the value of their discovery, the group quickly organized to recover the remaining ordnance and artillery. Equipped with a rented tug, barge, and crane, they returned to Fort Branch in early July. On July 8, recovery operations began in earnest (Fig. 15). In spite of swift current and zero visibility, divers quickly located and rigged the first of several cannon for recovery. Once aboard the barge, it was identified as a 32-pounder banded and rifled naval gun weighing approximately 9,000 pounds. The second cannon, considerably smaller and less difficult to raise, proved to be a Blakely rifle and iron carriage manufactured in England. After some difficulty, the operation produced a third piece of ordnance. The final gun was a 24-pounder smoothbore Model 1819 that had been cast at the Columbia Foundry in Georgetown, D.C., in 1828. With the exception of wheel rims and spokes, its siege and garrison carriage had survived in an excellent state of preservation.

Recovery of the three cannon attracted considerable local attention. Numerous proponents of a restored and preserved Fort Branch were angered that the projectiles and cannon were being transported out of North Carolina to be sold into private collections. Consternation expressed to

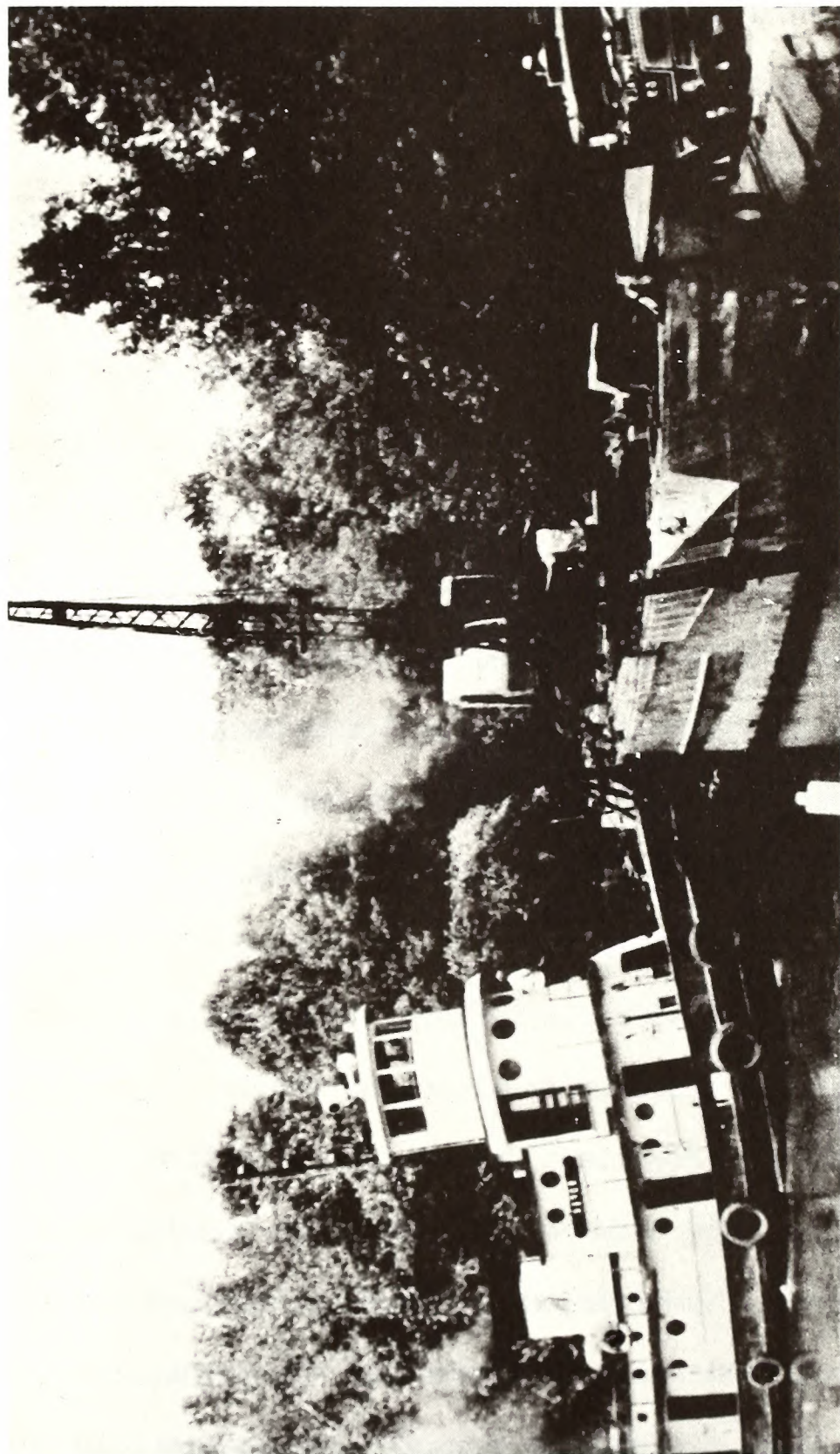


Figure 15. Cannon recovery operations, 1972 (Courtesy Williamston, North Carolina, Enterprise)

local law enforcement agencies was relayed to the Office of the Attorney General and the Division of Archives and History in Raleigh. Once apprised of the 1967 statute confirming state ownership of all submerged cultural resources, Martin County sherriff's deputies and the North Carolina Highway Patrol intercepted the salvors near Hamilton and confiscated the cannon. Unfortunately, numerous projectiles recovered during the operation had already left the state (Fig. 16).

In subsequent litigation the constitutionality of the 1967 legislation was upheld and the cannon were turned over to the Division of Archives and History for custody and preservation. While the civil suit focused much attention on the existence and nature of the "underwater archaeology" law, it also drew attention to Fort Branch. The site and associated artifacts, previously protected by relative obscurity, became a stimulus for increased looting. Diving relic collectors began to frequent the site and carry away additional material. In spite of surveillance kept up by the Martin County Sheriff's Department and the owners of the Fort Branch property, these activities continued.

Although aware of the extensive loss of material associated with the Confederate occupation of Fort Branch, the

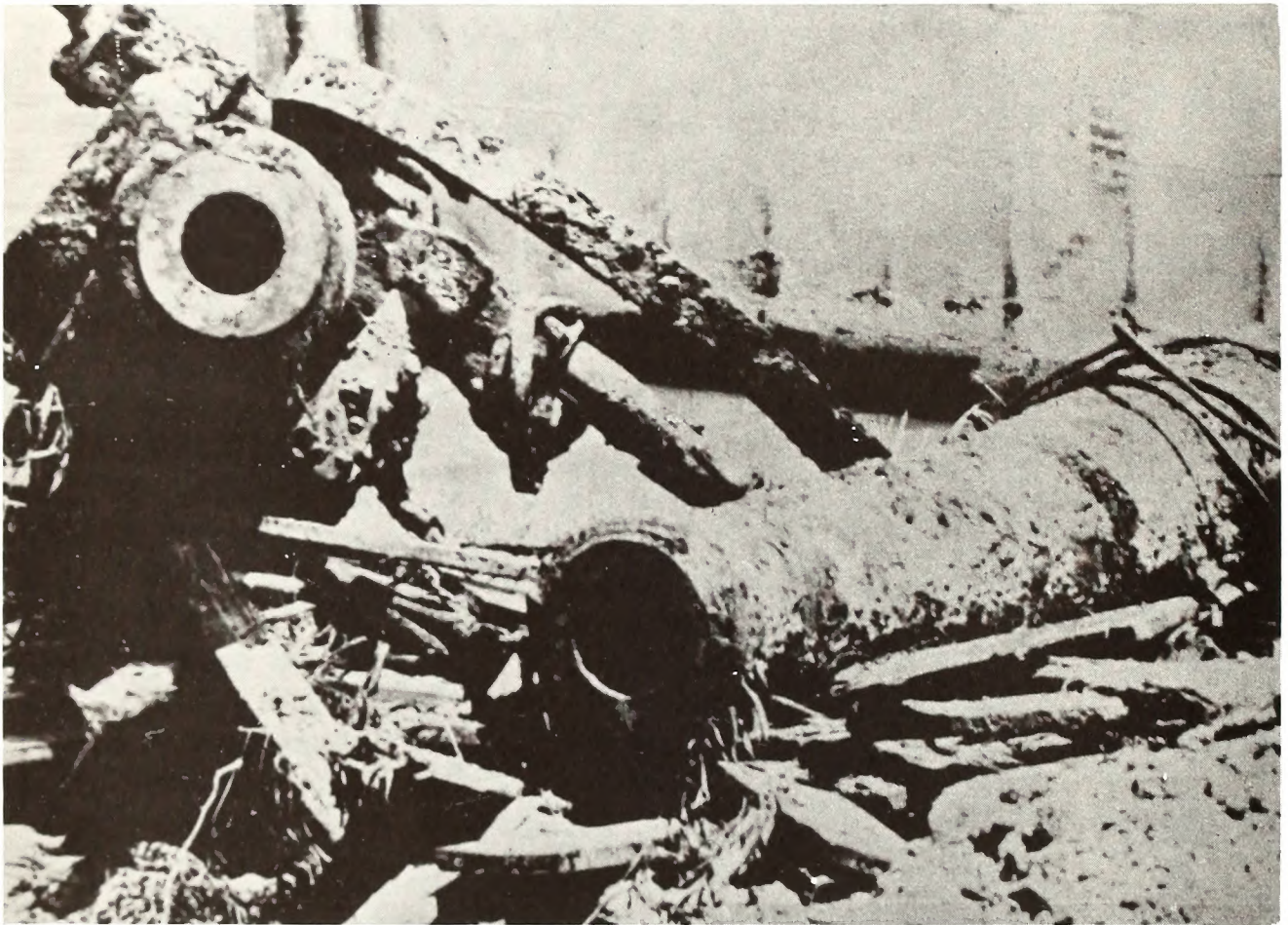


Figure 16. 1972 cannon after confiscation (Courtesy Williamston, North Carolina, Enterprise)

Division of Archives and History was unable to respond to the problem until 1977. After arrest of the salvors and confiscation of the recovered guns, a related injunction prevented even a cursory examination of the river bottom, and staff activities in the area were limited to stabilization and preservation of the ordnance. While these restrictions prevented investigation in the river below Fort Branch, some archaeological testing inside the fortification was conducted by field school students under the direction of Dr. David Phelps of East Carolina University. At the request of the Fort Branch Battleground Commission, Dr. Phelps investigated, through test excavations, several features within the fort. A cross section trench was dug at approximately the middle of the commissary structure and an excavation of the entryway and steps on the river end of the structure was completed. Fragments of the charred steps were reclaimed, and the width of the building measured. Artifacts recovered or observed on the commissary floor consisted entirely of iron fragments and charred timbers. Photographs of the excavated floor and adjacent fill were taken. Excavations were also conducted in one of the river face gun emplacements in which remains of the gun platform and some iron bolts were found. The only other artifacts

from this excavation were from a modern intrusive pit containing campers' debris. The timbers of the gun platform were measured, photographed, and the excavation refilled. A report of these excavations is to be included in a volume of Roanoke River studies now in preparation.

Once the courts decided in favor of the state, restrictions on examining the river bottom area were dropped and an assessment of the situation could be made. The first effort to examine the river bottom in the vicinity of the fortification was made by personnel from the Underwater Archaeology Branch on September 20, 1974. Unfortunately, high water and swift currents made work on the site impossible and the effort was abandoned after a series of exploratory dives. A second examination of the site was made on August 18, 1976. Taking advantage of seasonally low water, staff personnel were able to locate and identify several additional pieces amid accumulations of snags and debris. A single Blakely projectile was recovered for analysis and preservation, and a sample of water was taken to determine salinity and chemical content. Conditions in the river were found to improve considerably with low water and thus would not preclude the possibility of conducting a systematic recovery of the remaining material. Additional

evidence of looting indicated that recovery of the remaining material was the only effective method of assuring that it would be preserved and protected.

DESCRIPTION OF WORK

Project work began at the site in the spring of 1977. The numerous obstructions on the river bottom noted during the preliminary investigations represented a safety hazard to project participants and complicated survey and recovery activities, so an attempt was made to remove as many as possible. In May the United States Army Corps of Engineers' snag boat SNELL worked its way up the Roanoke removing trees and debris in order to clear the river for navigation. At the request of the Underwater Archaeology Branch, the SNELL and its crew were scheduled three days to move upstream from their area of operations to Rainbow Banks to assist in clearing the project area. Divers from the Underwater Archaeology Branch located snags with a recording fathometer and cabled each one for removal by the SNELL. Before lifting, each snag was examined by divers to ensure that any material that might have been thrown from the fort would not be disturbed. In spite of careful inspection, the first snag raised by the SNELL came to the surface with a wood and iron wheel rim fouled in its branches. The rim was immediately retrieved by staff members and snagging operations were discontinued in the area where cannon remains were known or suspected. The clearing of major

obstructions was then completed along the remainder of the river bottom below Fort Branch (Fig. 17).

Less than two months after the snagging operation, the survey and recovery project was initiated. A comprehensive topographic survey of the site was the first objective. In addition to generating the data required for the compilation of a topographic map, the survey established controls essential to the production of magnetic profiles of the site, bathymetric profiles, and the systematic recovery of material from the river. Working in daily temperatures in excess of 100 degrees fahrenheit, survey crews extended grid coordinates from a baseline established through the length of the earthwork fortification and placed survey stakes at 20-foot intervals throughout the site (Fig. 18). As the location of material and data recovered from the river bottom was to be coordinated with the survey of the fort, grid lanes were carried over the bluff to the water's edge and continued across the river to establish points along the north bank. Because of the almost vertical nature of Rainbow Banks, profiling the bluff required that conventional survey techniques be abandoned and a geometric technique adopted. Stadia rods were fitted with levels and two iron rings were attached at the 8- and 12-foot increments to



Figure 17. SNELL with snag



Figure 18. Surveying in Fort Branch

serve as fair-leads for a plumb bob, which was attached to a measured nylon survey tape fed through the fair-leads. One end of the stadia rod was placed at an established survey point and then made level with that point by adjusting a line attached to the end. A transit was then used to position the rod horizontally until it conformed to the desired lane orientation. At this point the plumb bob was lowered and the vertical distance recorded along with the horizontal distance controlled by the fair-leads attached to the stadia rod. Once the plumb bob location was marked with a stake, the process began again at that point (Fig. 19). Frequently, teams working down the face of the embankment were forced to employ rappelling equipment and techniques to accomplish a controlled descent. Once all of the survey points were established, elevations were taken over the entire grid and the data was reduced to a topographic map.

After survey markers were established on both banks, a magnetic and bathymetric profile of the river was conducted. Because the adverse conditions inherent in the Roanoke at Rainbow Banks precluded the possibility of conducting an accurate and complete diver search of the total survey area in the time span available, and because

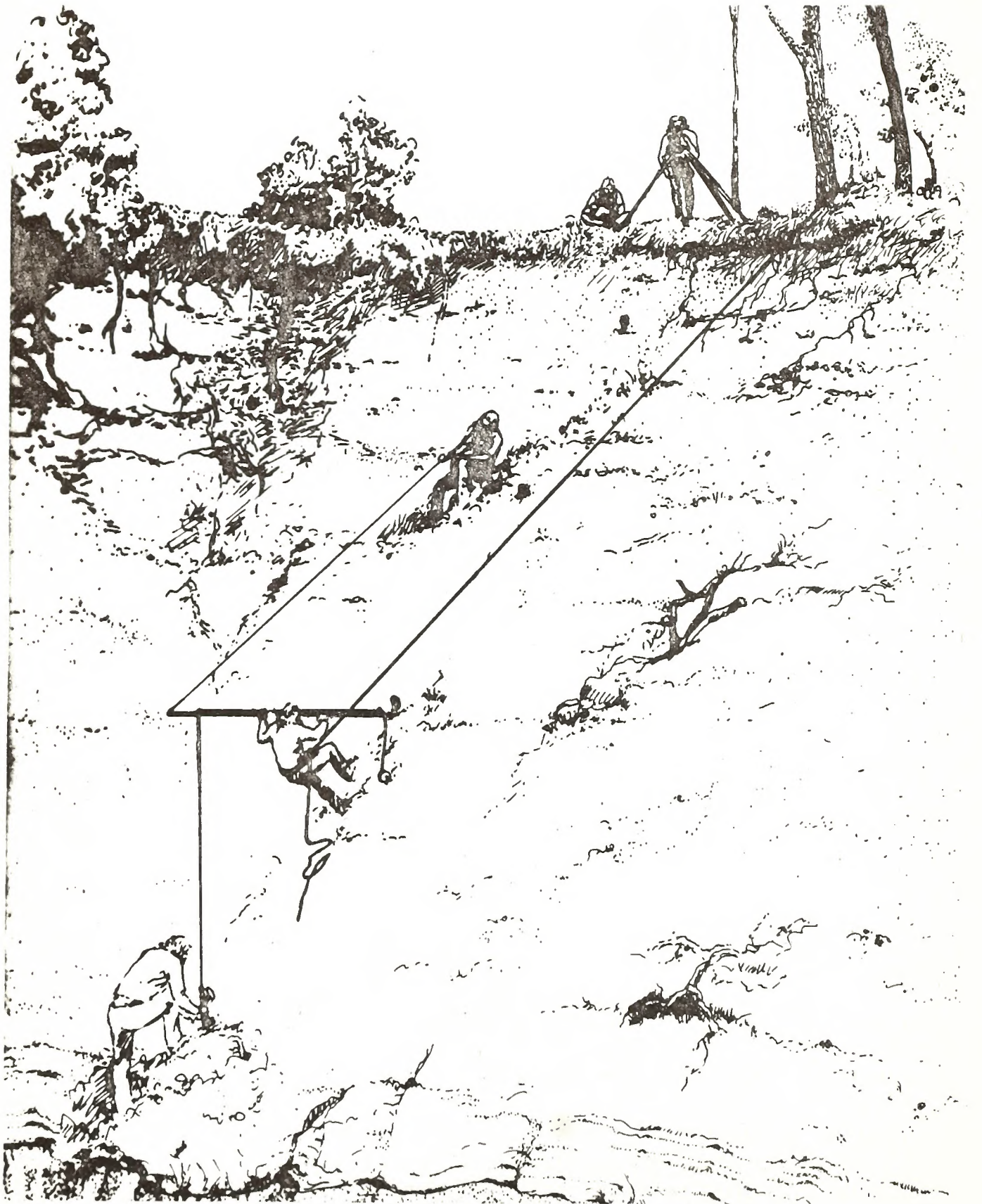


Figure 19. Vertical surveying technique

of the distinct possibility that material from the fort would be completely covered with bottom sediments, magnetic data was essential. From a small boat positioned by lines stretched along the survey lanes that ran across the river, water depth and magnetic data was collected every 20 feet. Water depth was determined using a small recording fathometer. The magnetic gradient was measured using a Geometrics (801-G) proton precession magnetometer (Fig. 20). Once collected, the magnetic and bathymetric data was plotted on the site map and tied in with the topographic map of the fort. Examination of the data revealed that ferrous material in the survey area was concentrated in a portion of the river bottom below the bluff immediately west of the original entrance to the fortification; the area where preliminary investigations had located cannon and gun carriage remains.

Once the magnetic survey was completed and the area of artifact concentration determined, final preparations were made for diving, excavation, and recovery operations. On July 18, following the magnetic survey, a 40-foot by 100-foot barge, on loan to the project from the Georgia Pacific Corporation, was delivered by tug to the project site. It was necessary that the magnetic survey be

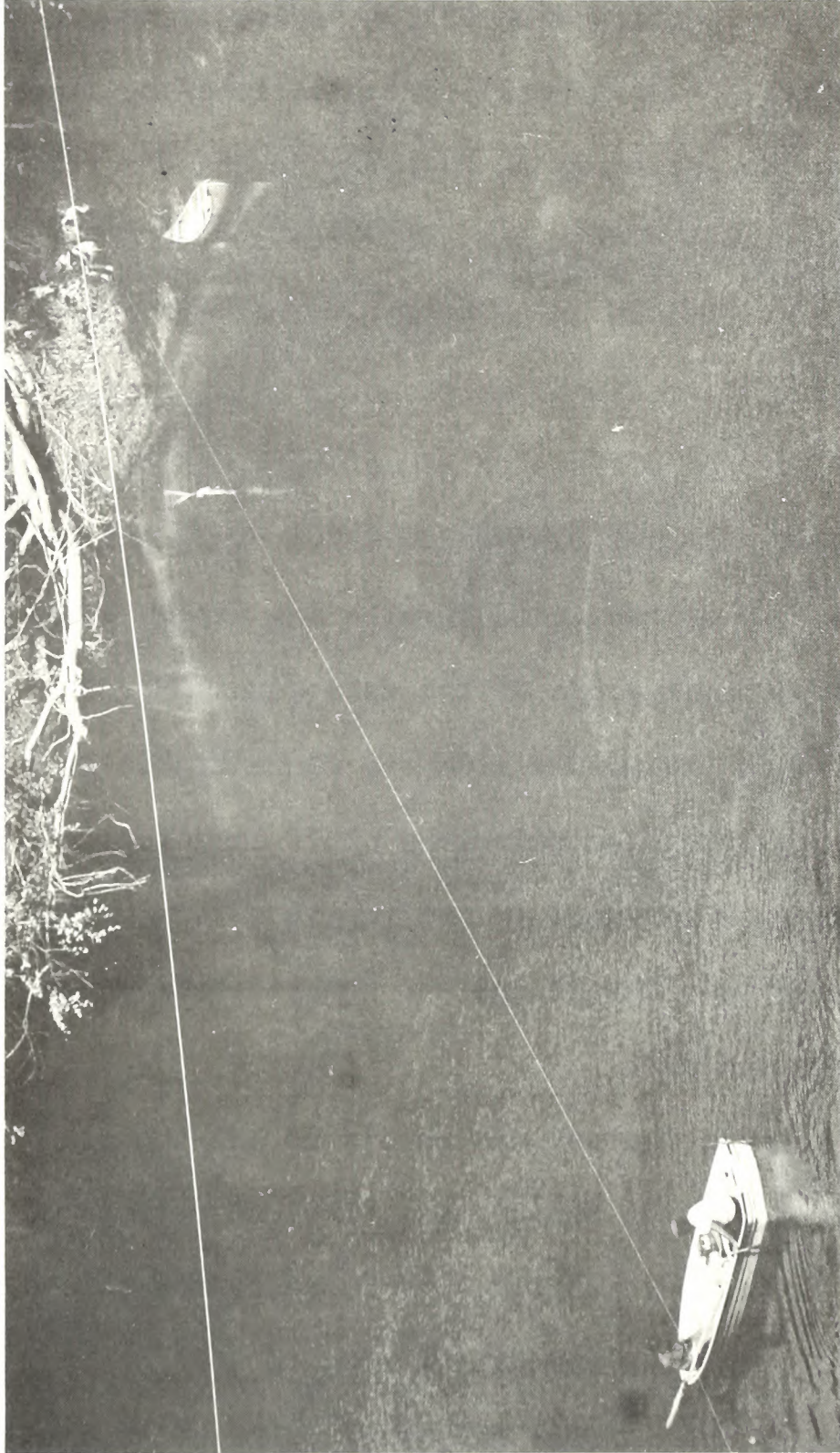


Figure 20. Magnetometer survey of river

completed prior to the arrival of the barge as the magnetic disturbance caused by its iron mass would have seriously affected the magnetometer readings. Upon arrival, the barge was securely moored to the south bank of the river with its easternmost end just upstream of the search area (Fig. 21). With the barge in position, a stairway from the top of the bluff was completed to provide access. Scuba gear, compressors, temporary storage tanks for artifacts, airlifts, and other equipment were then placed aboard the barge, which became the staging area for underwater work.

Initial underwater activities involved establishment of a rope grid on the river bottom encompassing the magnetically isolated artifact concentration. The approximately 90-foot by 110-foot search area had its four corners staked out with utility pole screw-eyes that were triangulated into the overall site survey. To ensure a thorough and systematic search of the entire area, the grid was divided by rope into 18 five-foot-wide search lanes. These lanes were laid out parallel to the river bank and were begun just below the surface, several feet from the south shore of the river (Fig. 22).

Upon completion of the grid, the full length of each lane was systematically searched by divers. Locating

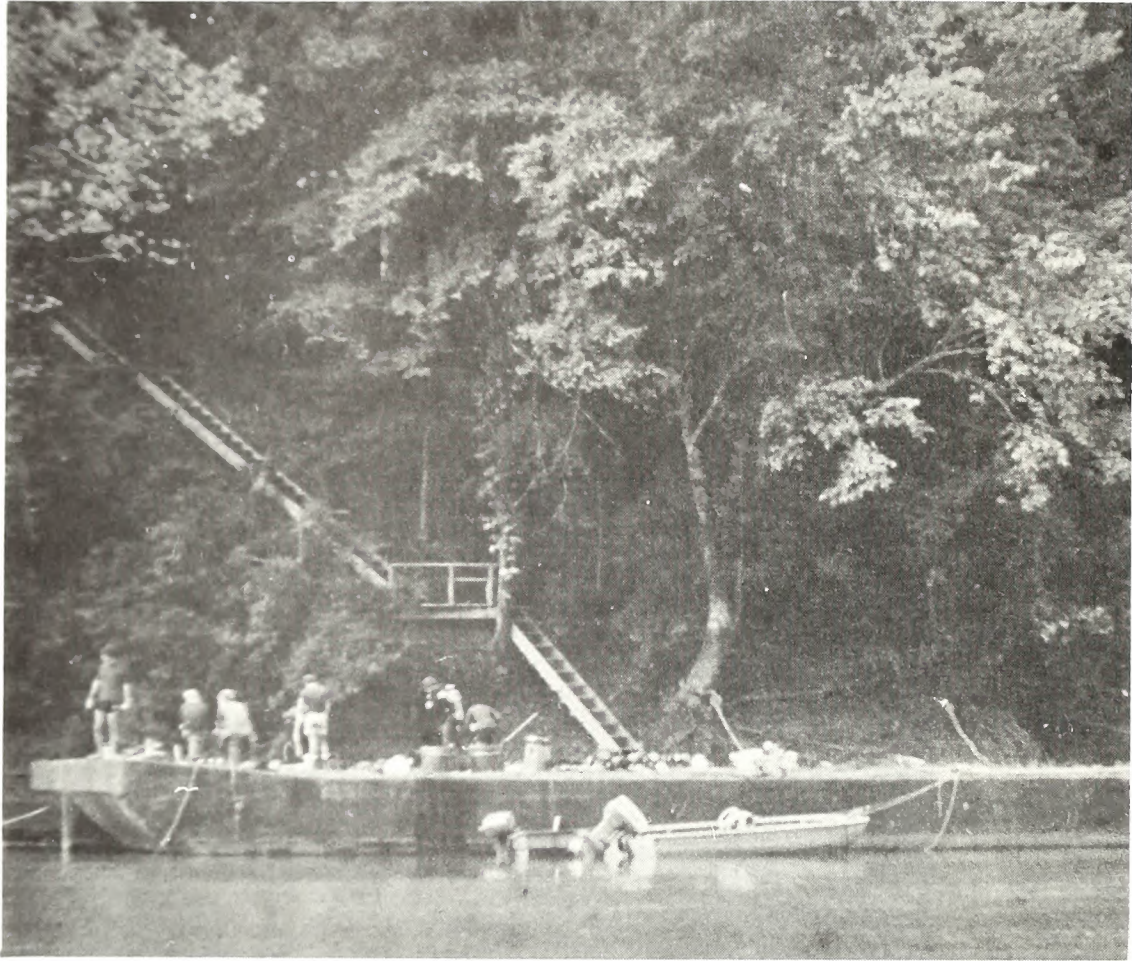


Figure 21. Barge in position upstream of search area



Figure 22. Buoys marking grid location

artifacts submerged beneath bottom sediment and hidden among the debris and obstructions proved to be difficult without the advantage of visibility. A thorough examination of each lane required both a methodical tactile search and the use of underwater metal detectors capable of responding with an acoustic indication signal to metal objects buried in up to a foot of sediment (Fig. 23). When an artifact was located, the diver working in the lane would signal surface observers with a small stadia buoy. The diver would then pull the buoy line taut, bringing the stadia buoy into a vertical orientation over the artifact. The location of the find would then be determined by triangulation with a set of transits positioned on the north bank of the river. Once artifact location had been established and recorded, the search diver was alerted and a standby diver was dispatched to retrieve it (Fig. 24). At the surface, the artifact was cataloged and tagged with a number keyed to the location determined from the two transit stations (Fig. 25). Each artifact was then placed in temporary wet storage on the barge and later transferred to a secure storage area in the project camp at the top of the bluff, where photographic documentation was conducted (Fig. 26).



Figure 23. Staff diver with metal detector



Figure 24. Transit crew on bank during recovery operations

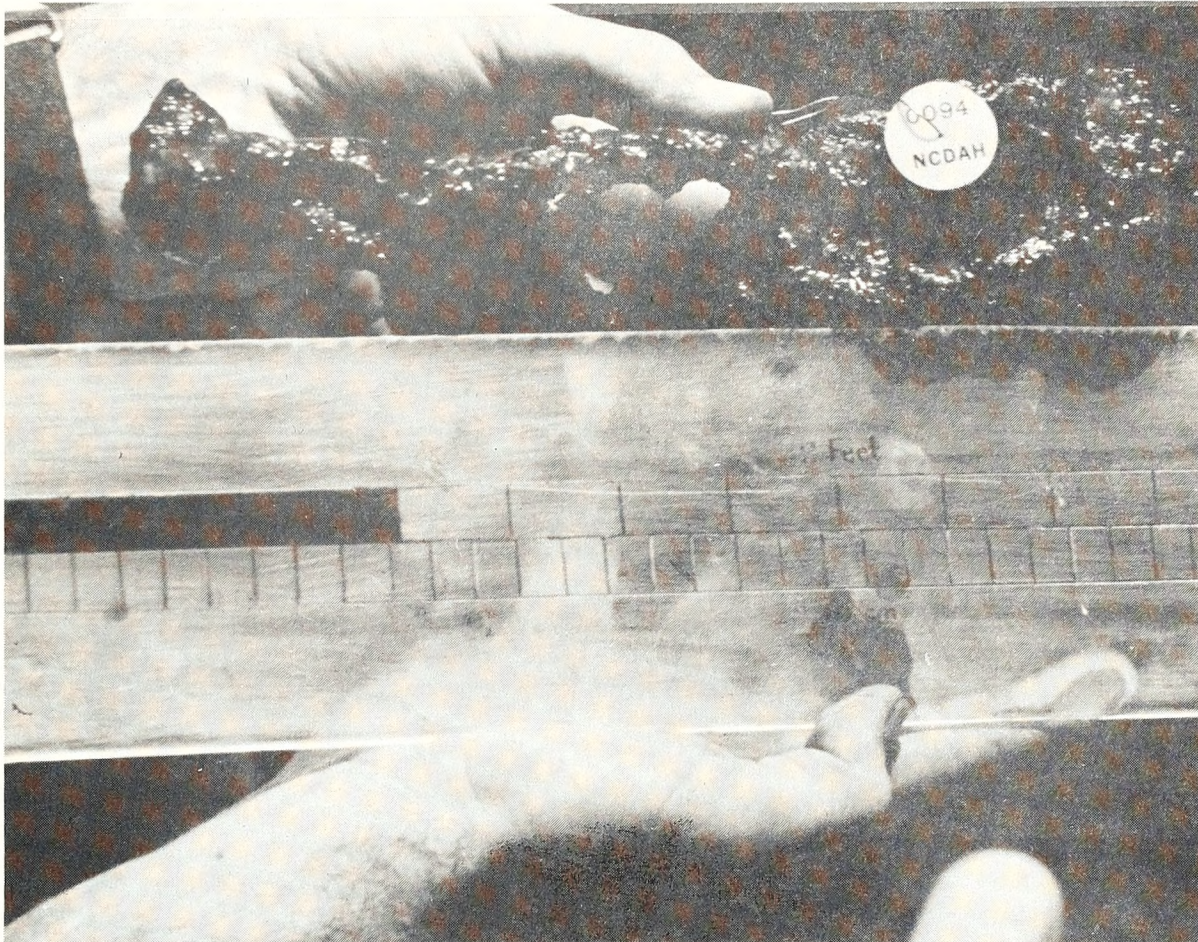


Figure 25. Tagging and measuring artifacts



Figure 26. Photographing artifacts

During the search of the grid lanes it became apparent that the smaller artifacts occurred in greatest concentration in the area of river bottom where the clay slope of the bluff leveled off into the sand of the river bed. Therefore, in addition to the grid area, a single survey line was placed along this interface of clay slope and sand bottom and a diver search with metal detectors was conducted along it. This search extension located, in addition to other artifacts, two brass cannon sights. All the artifacts found along this extension also had their positions triangulated with the north bank transits before recovery (Fig. 27).

Once those lanes containing cannon had been cleared of artifacts and surface obstructions, a second operation was initiated. Using airlifts, additional crews began to excavate in the vicinity of the cannon. This operation served two purposes. First, the excavation cleared sediment away from the guns so that the lifting straps could be more easily secured for the recovery. Second, it located artifacts that had been obscured from the metal detector search by the masking effect of the iron cannon. In addition to the two large cannon that were almost completely exposed, three cannon carriages were found covered

ROANOKE RIVER MAGNETOMETER SURVEY

FORT BRANCH SURVEY
AND
RECOVERY PROJECT 1977

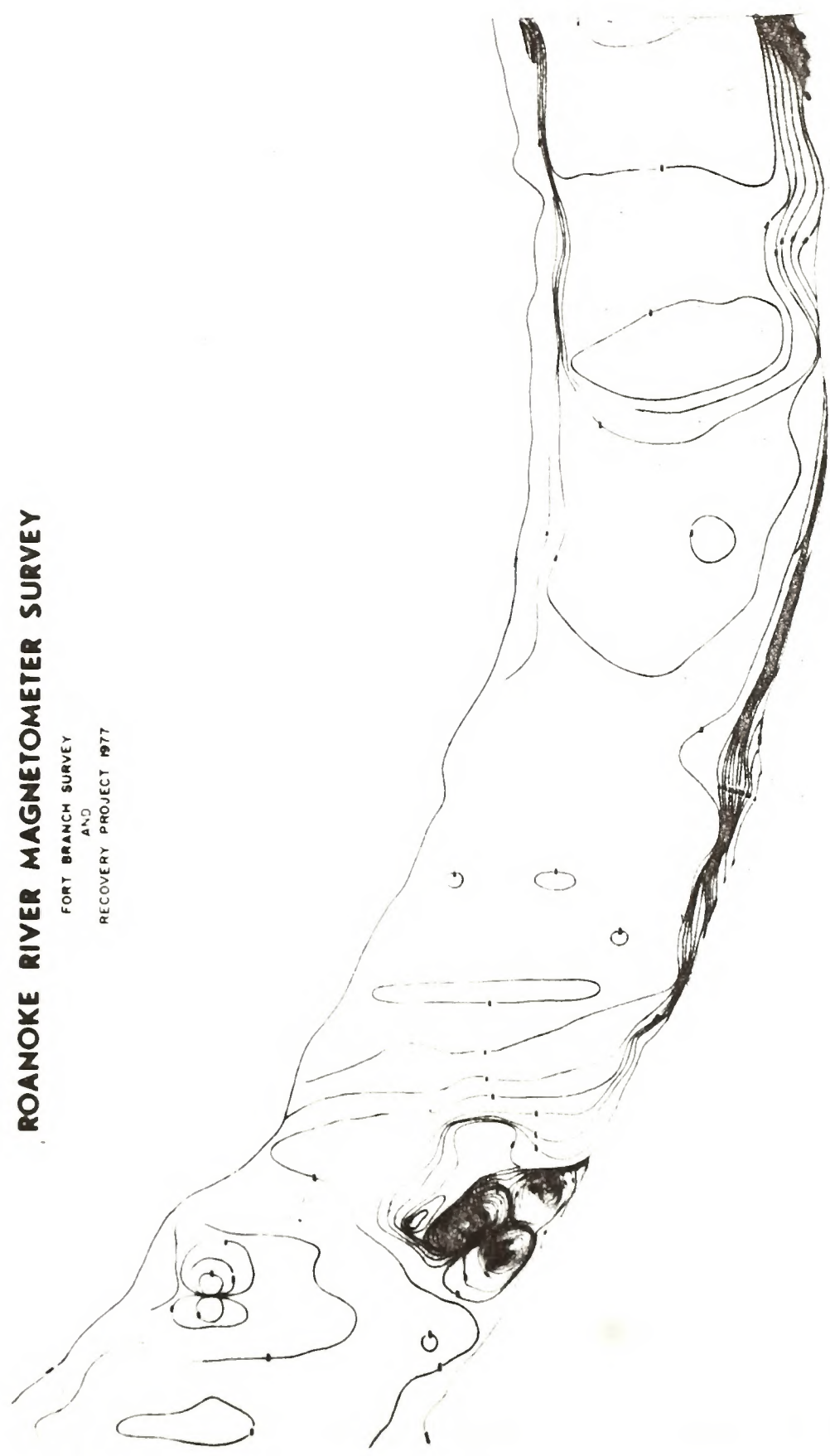


Figure 27. Magnetometer survey map showing concentrations of artifacts at bottom of bluff

to varying extents by the bottom sediment. Air lifting was required to remove tons of mud and sand before these pieces could be positively identified and prepared for recovery (Fig. 28).

When the buried carriages were exposed, two were found to mount what were tentatively identified as 6-pounder field pieces. The third proved to be an empty siege and garrison carriage similar to the one recovered in 1972. When fully exposed, the fieldpieces and empty carriage lay at the bottom of sizable depressions in the river bottom. Because high sediment transfer constantly refilled the excavation depressions, the small cannon and empty carriage were slung with lifting straps and attached to sunken 55-gallon drums. By filling the drums with air it was possible to lift both cannon and empty carriage to the surface and move them to pre-selected sites on more stable bottom where they could be easily raised during the recovery operation. In addition to the two cannon and the carriage, the numerous large wheel rims that had been located throughout the grid were also moved in the same manner to a central location to facilitate their recovery and further clear the area surrounding the large cannon (Fig. 29).

By the time the Army Reserve LCU 1467, carrying a

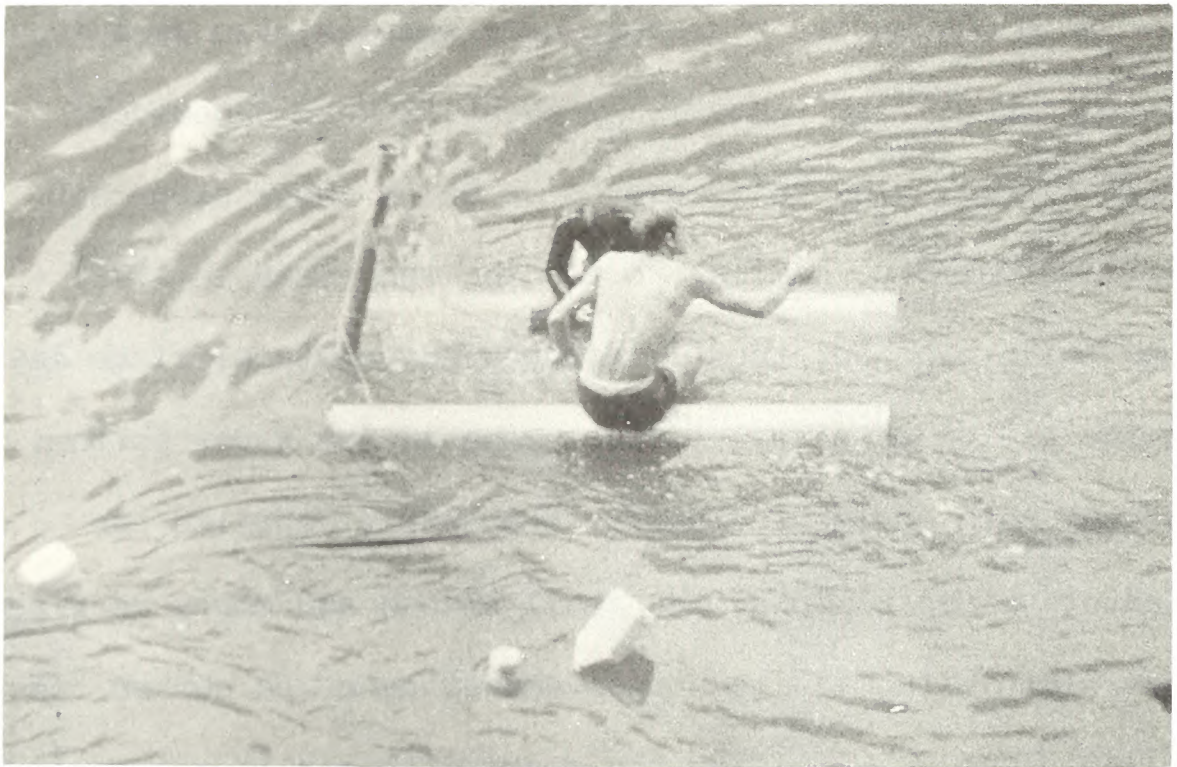


Figure 28. Airlift and sifting apparatus in operation

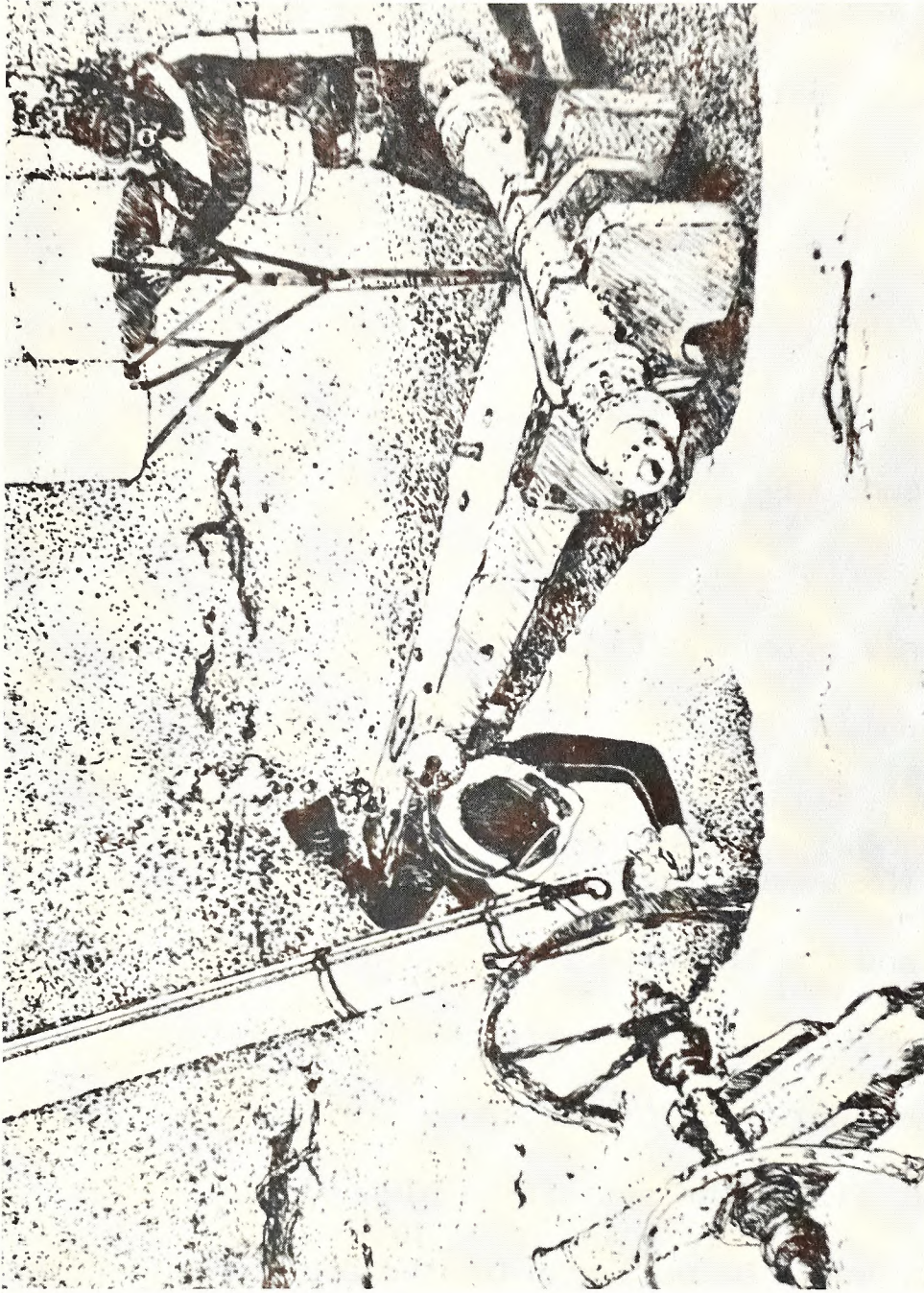


Figure 29. One diver excavating with an airlift and another using 55-gallon drums to lift a carriage

20-ton capacity mobile crane, arrived at Fort Branch on August 7, the two large cannon had also been prepared for recovery (Fig. 30). Because of the complete lack of visibility and the critical necessity for having each gun slung properly with lifting straps, this task was carried out by the most experienced members of the staff. Rigging the guns by feel demanded that only one diver carry out the entire operation on each cannon in order to minimize the chance of neglecting some facet of the process. Twenty-thousand-pound capacity nylon straps were provided by the United States Army for slinging the guns. The fabric straps were not only stronger than standard rope or steel cable, but also would not chafe or cut into the metal surface of the cannon.

With the cannon, carriage, and wheel rims prepared for recovery, and the LCU with its crane on site, preparations for the recovery operation were nearly complete. A final briefing session at 7:30 a.m., August 8, was scheduled to ensure that all of the activities planned for the first day of recovery would be well coordinated and that all participants would have a comprehensive understanding of the entire operation. In addition, it was essential that the law enforcement agencies handling crowd control, safety, and vessel



Figure 30. Arrival of LCU 1467

traffic be apprised of the planned activities. Once this had been accomplished, the recovery operation began.

Divers involved in raising the cannon were equipped with Kirby-Morgan KMB-10 dive helmets and Helle hard-line communications systems. In addition to offering increased safety, the KMB-10/Helle system permitted three-way communication between the two divers and a surface station on the barge. Radios provided by the Army Reserve completed the communications link with the crane operator and the captain of the LCU (Fig. 31). With the cannon already slung, diving operations required only that the hook of the crane be attached to the lifting straps and then a check of the straps to be certain that they were secure. Within minutes after the recovery divers had submerged, the first cannon was ready to be lifted. As it cleared the river bottom, a projectile was discovered under the carriage. Because it was impossible to determine if the shell was live, the operation was halted until the projectile could be carefully removed and carried to the surface by one of the standby safety divers. When the gun had been lifted to the surface of the river, a final check of the lifting straps was made and then the divers returned to the barge (Fig. 32).

The cannon, a 24-pounder smoothbore Model 1819, mounted



Figure 31. Staff member at surface communicating with recovery divers



Figure 32. Diver checking lifting straps at surface

on wooden siege and garrison carriage, was hoisted above the surface, swung gently onto the LCU, and set on a bed of automobile tires and oak blocks on the vessel's deck.

Once the gun was secure, the LCU's fire suppression system was activated and a continuous freshwater mist was sprayed over the recovered material to prevent drying and subsequent accelerated deterioration. To record any details that might be lost in handling or from exposure, a complete photographic record was made immediately.

With the first cannon secure, the divers returned for the second, one of the 6-pounder fieldpieces. Although much lighter than the first gun, the recovery required considerably more care, because a portion of the carriage wheel remained intact and in fragile condition. To protect the remaining wheel, the sling was adjusted so that none of the weight of the gun would be placed on the wheel as it was set on the oak blocks and tires on the LCU's deck (Fig. 33).

With both guns secured and under a continuous freshwater spray, the LCU departed for the boat landing upriver at Hamilton (Fig. 34). At the landing, the cannon were off-loaded from the LCU onto a trailer provided by the North Carolina Department of Transportation and returned to Fort Branch (Fig. 35). To permit public access during

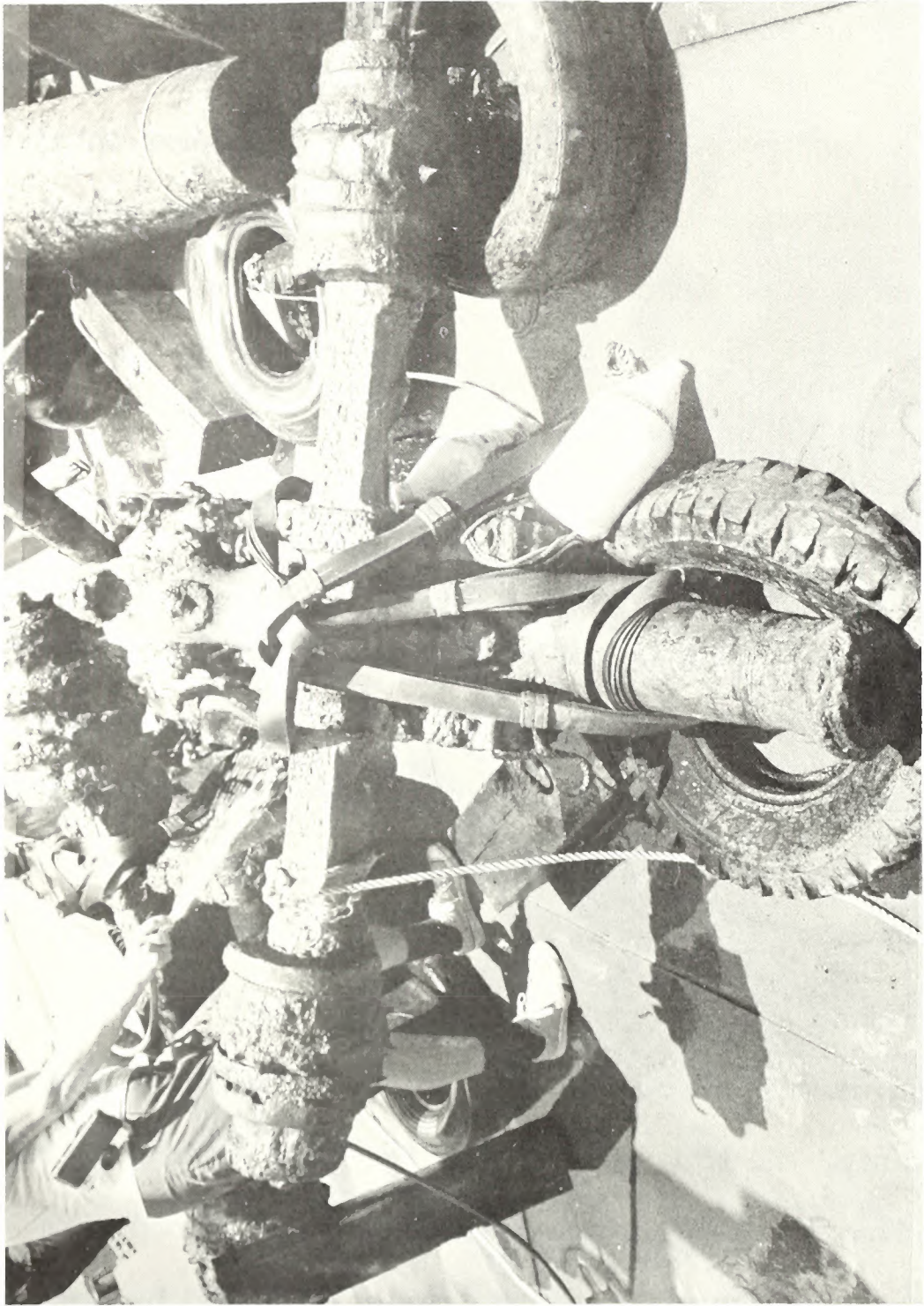


Figure 33. Six-pounder on deck of LCU



Figure 34. LCU with cannon under spray

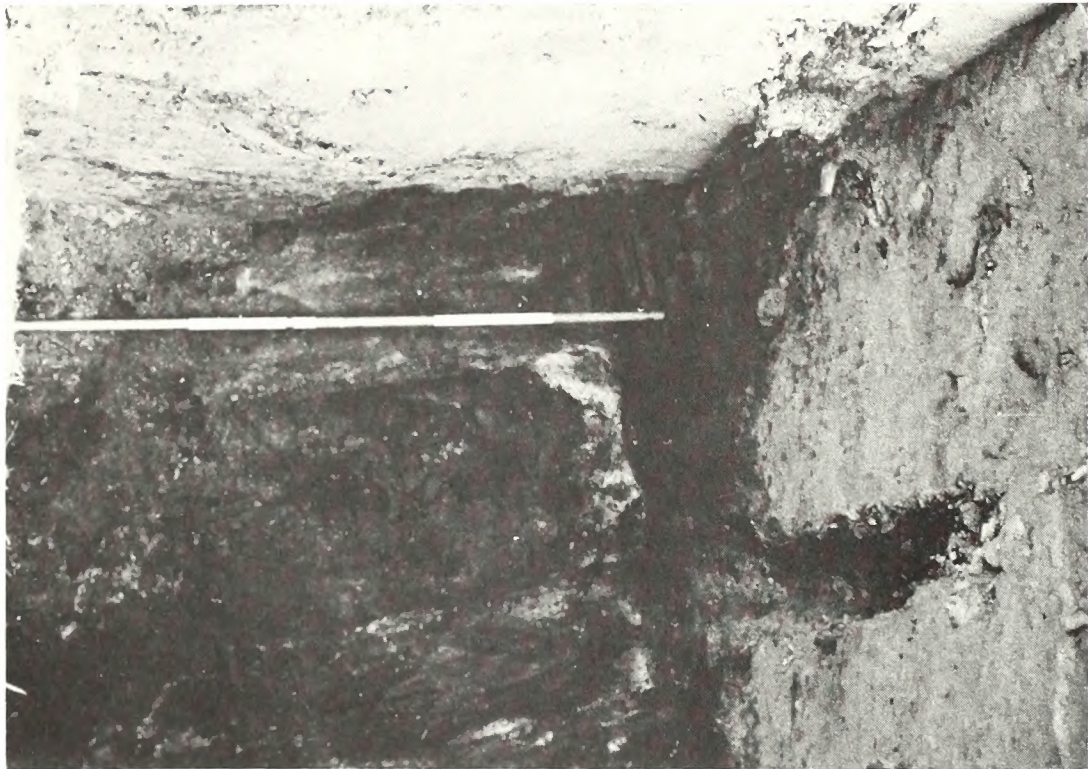


Figure 35. Off-loading at Hamilton

documentation and disassembly, the recovered ordnance was placed under sprinklers in an open area near the top of the bluff from which they were pushed into the river 112 years earlier.

The following day, recovery operations began with the raising of the third cannon. The gun proved to be a 4.62 inch rifle, Brooke type, manufactured by the Tredegar Foundary at Richmond, Virginia in 1863. It was mounted on a wooden siege and garrison carriage (Fig. 36). Next retrieved was the second 6-pounder field gun, an almost identical match to the one raised the day before, mounted on a wooden field carriage. Following the recovery of the final two cannon, the empty siege and garrison carriage and the loose wheel rims were brought aboard the LCU. All the material was again kept under a freshwater spray, moved upriver to the landing at Hamilton, and transported to Fort Branch for temporary public display. Documentation and dismounting were completed within a few days and all artifacts were placed in freshwater storage awaiting preservation treatment.

Final survey work in the river after the recovery efforts involved a metal detector search of the bottom areas from which the cannon had been recovered. In



Figure 36. Recovery of 4.62-inch rifle

addition to retrieving any carriage parts that might have come loose during the lifting operations, the examination located those metal objects that had been masked from the metal detectors by the effect of the cannon's iron mass.

During the work in the primary search area, several days were spent on investigation of an anomaly located near the north bank. An excavation by divers using air-lifts to a subbottom depth of 5 feet revealed only unconsolidated sediment. A further probing of the bottom of the excavation with 5-foot rods indicated only additional layers of sediment and the investigation was ended.

ARCHAEOLOGICAL EVIDENCE

As indicated by the magnetometer survey data, material associated with the Confederate occupation of Fort Branch was concentrated on the river bottom in an area immediately northwest of the fortification (Fig. 37). The two large cannon, a 24-pounder smoothbore Model 1819, and a 4.62-inch rifle, Brooke type, were found at the base of the clay formation which constitutes Rainbow Banks. The 24-pounder smoothbore lay 20 feet downstream of the 4.62-inch rifle. Two smaller 6-pounder fieldpieces and an empty siege and garrison carriage were located 18 feet offshore and immediately north of the two heavy guns. All three artifacts were found in an inverted position covered to the axles in the coarse river bottom sediment. Unfortunately, locations of the three cannon recovered in 1972 cannot be established.

Most of the small artifacts recovered were found at the base of the Yorktown Formation. Plotting the distribution of smaller material on the river bottom revealed a concentration of projectiles, filler shot, fuses, and carriage fittings immediately east and downstream of the 24-pounder smoothbore. Immediately west of the 24-pounder and downstream of the 4.62-inch rifle, a smaller scattering

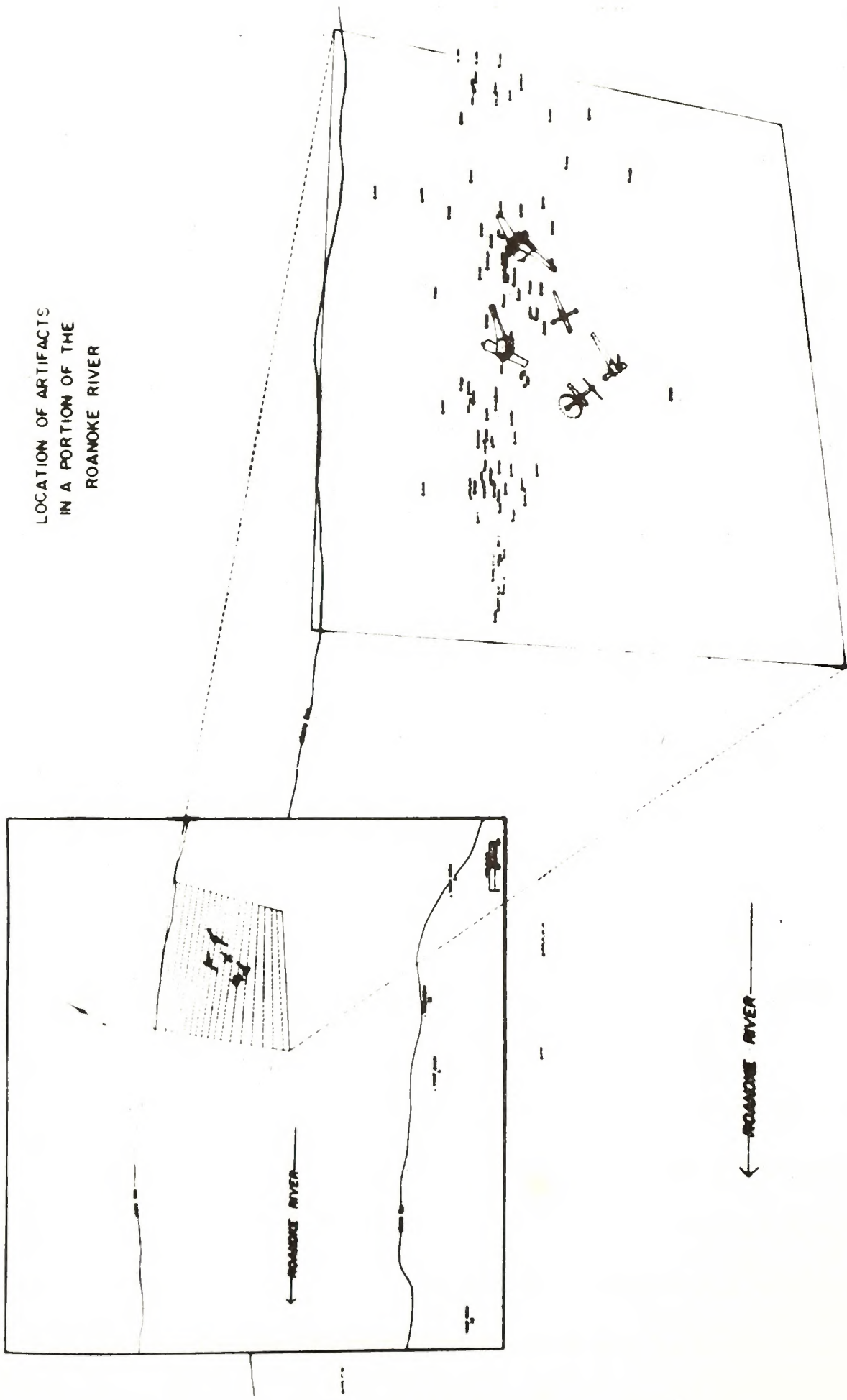


Figure 37

of carriage fittings, case and canister shot, and a fuse was evident. Wheel rims and the majority of other carriage parts were found in the immediate vicinity of the concentration of cannon. The only artifacts found outside this area were located 70 feet downstream below the gun emplacements. They consisted of two brass gunsights, a pair of wheel chocks, and a few iron carriage fittings. While the majority of all material recovered during the investigation was found on the bottom surface, artifacts were recovered from subbottom depths of up to 2 feet. In addition to material associated with the Confederate occupation of Fort Branch, recovery activities produced a considerable amount of nineteenth- and twentieth-century material associated with logging operations, fishing, farming, and littering.

COMMISSARY STRUCTURE

To provide insight into the nature of magnetic anomalies identified during the survey of the interior of Fort Branch, a limited test excavation was carried out in an area designated as the "commisary" in primary historical sources (Fig. 38). The location selected for investigation corresponded with the position of an anomaly approximately 120 gammas below the general background of the fort area and in a clearly discernible depression considered indicative of the remains of the "commissary" structure. Excavation revealed the source of the anomaly and provided information about the construction, use, and destruction of the structure.

Although the excavation was initiated on July 27, little progress was made until August 10, when a concerted effort to complete the work was undertaken. On the following day, the test square was expanded to 5 feet by 6 feet and refined to compensate for variations from the 5-foot by 5-foot area originally selected. With the test area redefined and cleaned up, excavation began in earnest on August 12, 1977 (Fig. 39).

Well-defined strata permitted the excavation to be carried out along natural levels rather than arbitrary ones

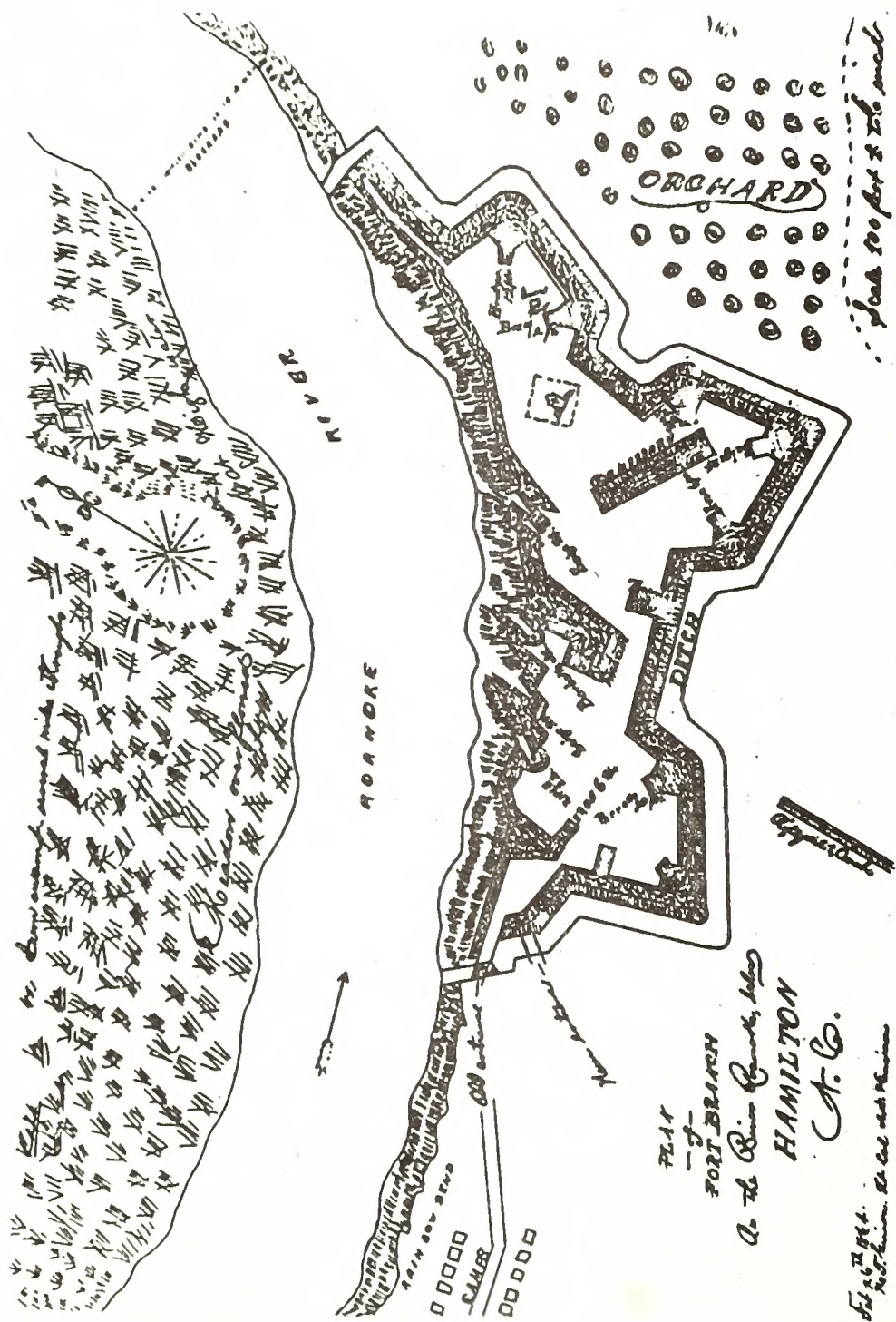


Figure 38. Lieutenant Colonel Guion's 1864 map of Fort Branch (Courtesy of North Carolina State Archives)

SITE OF THE COMMISSARY STRUCTURE TEST EXCAVATION

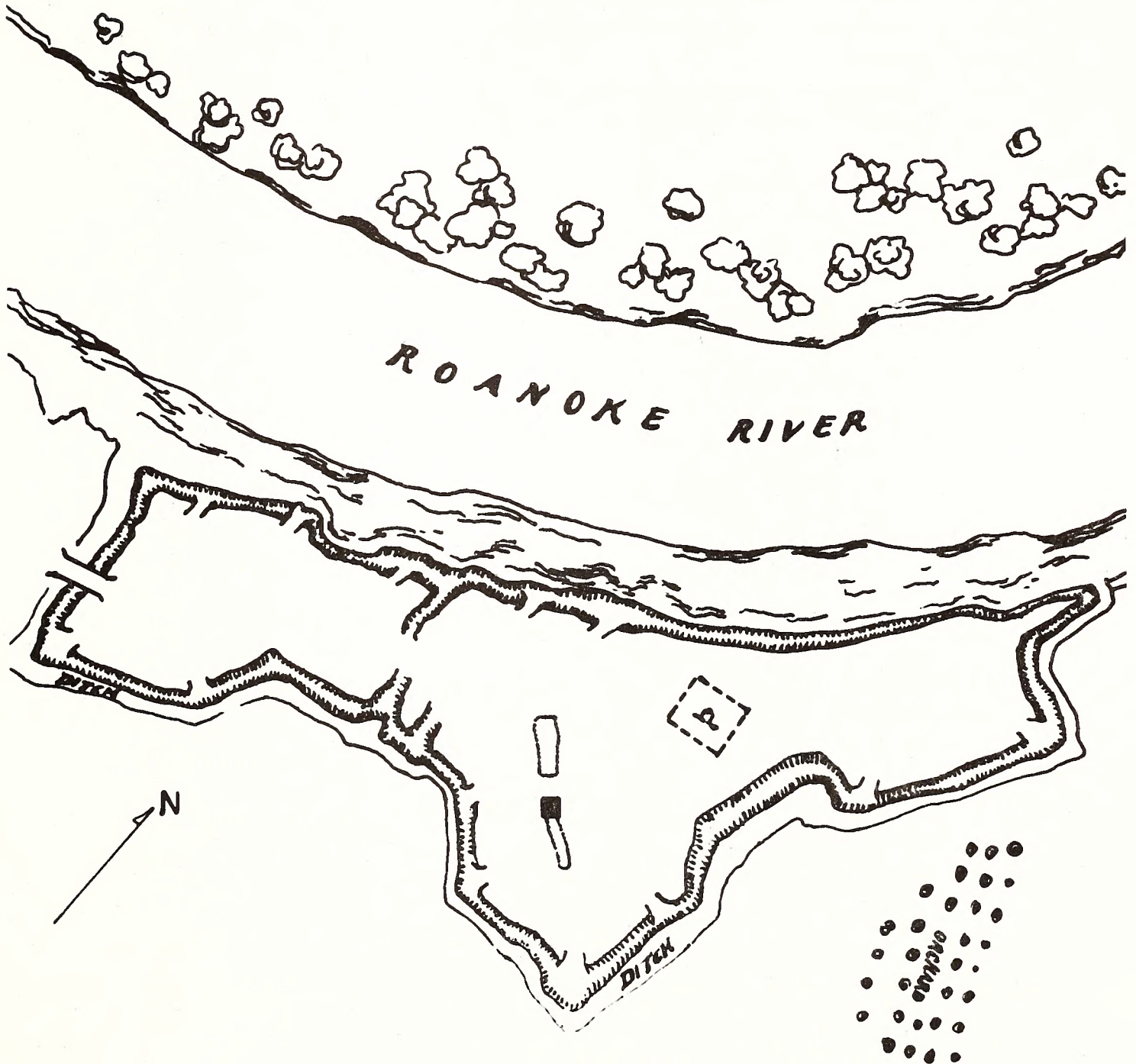
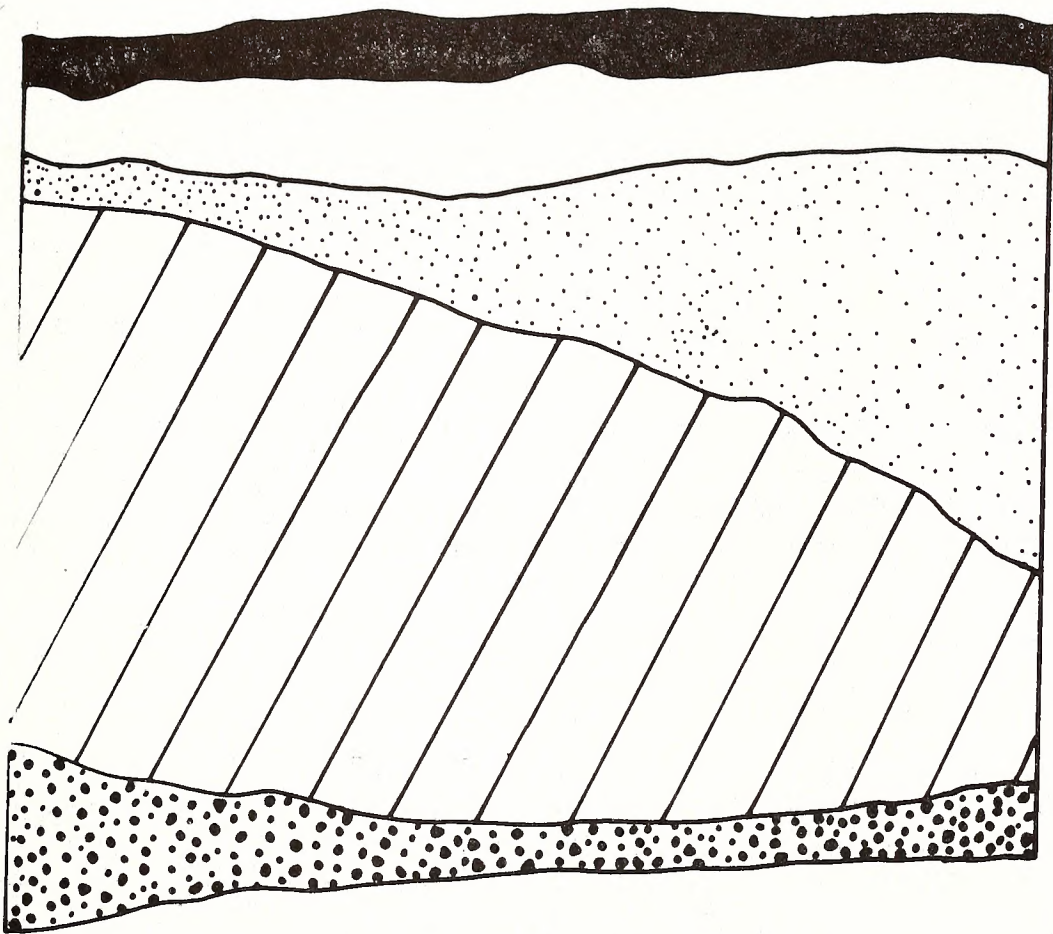


Figure 39

established by the investigators (Fig. 40). Removal of a 3-inch to 4-inch humus layer (level A) exposed a stratum of light tan colored sand (level B) that varied from 3 inches to 8 inches in thickness and contained numerous charred wood fragments, charcoal flecks, and occasional cut and wire nails. Below this, a stratum of medium grey sand loam (level C), varying in thickness from 5 inches to 30 inches, was observed. Additional charcoal flecks were noted along with the collapsed remains of charred timbers. A stratum of medium to dark grey sandy loam (level D) lay immediately below and was found to contain charcoal flecks, brick, rubble, iron fragments, and additional charred timbers. This stratum varied in thickness from 5 inches to 60 inches and contained charcoal, charred wood, timbers, and shell fragments. The final stratum was composed of Miocene clay and extensive amounts of charred wood, timbers, masses of projectiles, projectile fragments, and the remains of floor planks and sills (Fig. 41). Below the remains of the floor the construction trench was undisturbed except for an area in the southeast corner where several exploded but unfired projectiles were found.

Examination of the structural evidence indicates that the "commissary" structure was constructed in a 7-foot

COMMISSARY STRUCTURE TEST EXCAVATION



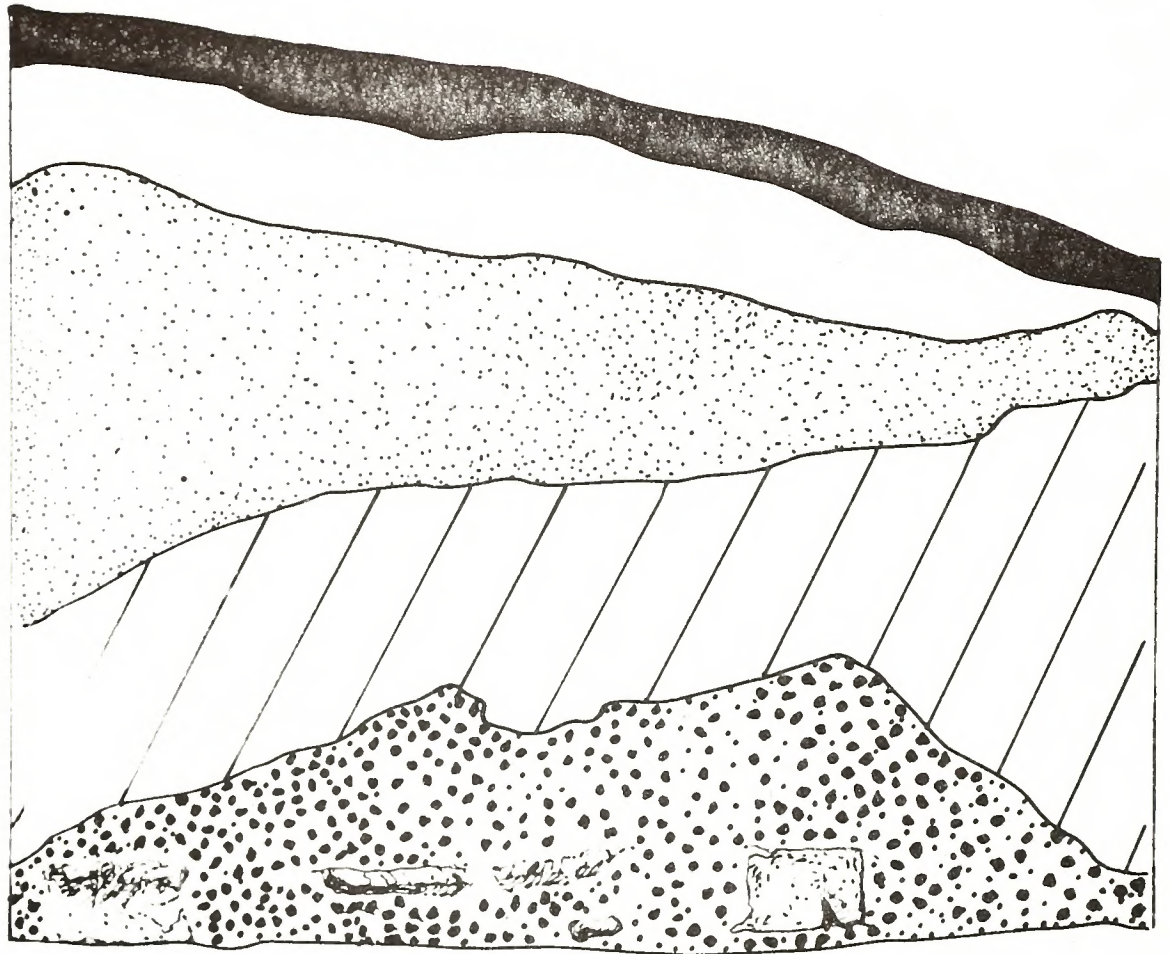
NORTH PROFILE

- LEVEL A
- LEVEL B
- ▨ LEVEL C
- ▧ LEVEL D
- LEVEL E



Figure 40 (A)

COMMISSARY STRUCTURE TEST EXCAVATION



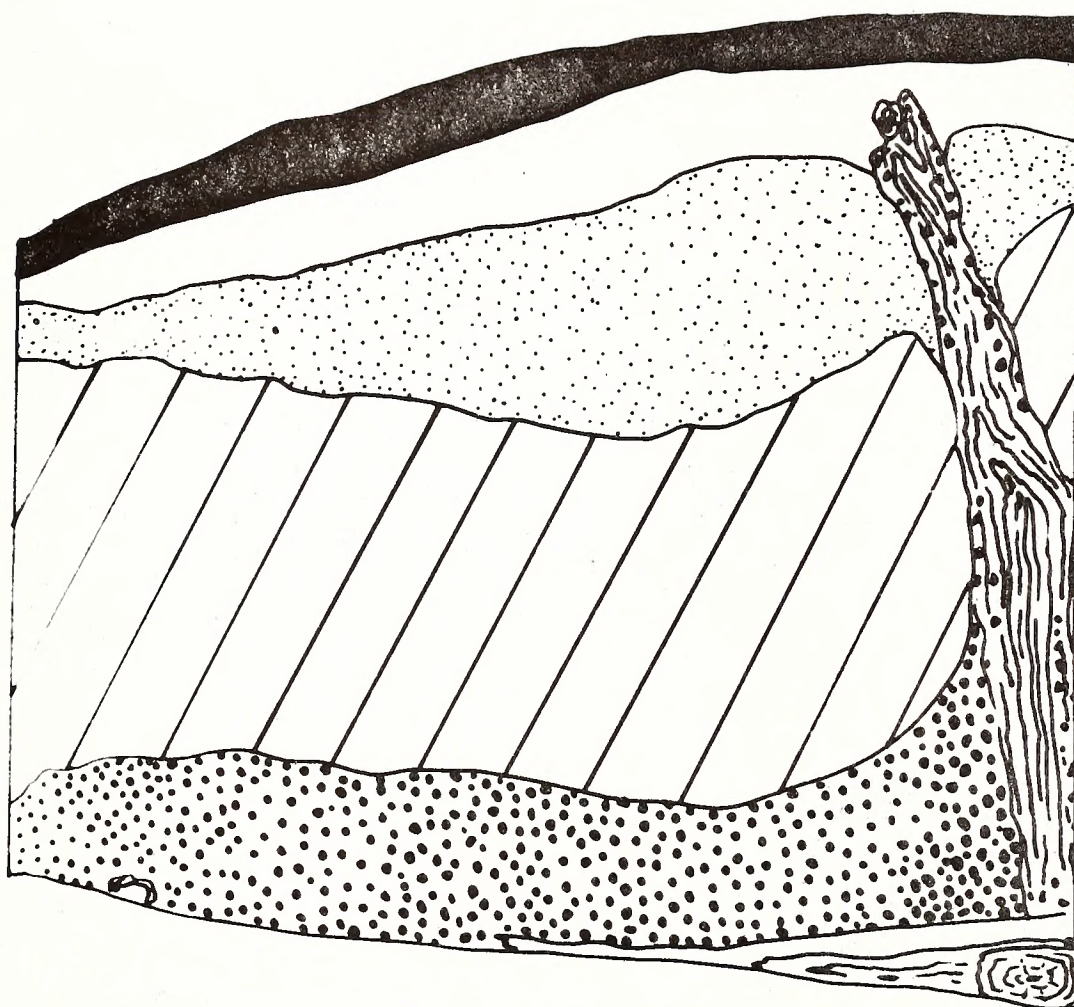
scale / 1" = 1'

EAST PROFILE

- LEVEL A / HUMUS
- LEVEL B / LT. TAN SAND- charcoal flecks, timbers
- ▣ LEVEL C / MED. GREY SANDY LOAM- wood fragments
- ▤ LEVEL D / DK. GREY SANDY LOAM- brick, iron, and wood fragments
- ▥ LEVEL E / MIOCENE CLAY- structural remains and ordnance

Figure 40 (B)

COMMISSARY STRUCTURE TEST EXCAVATION



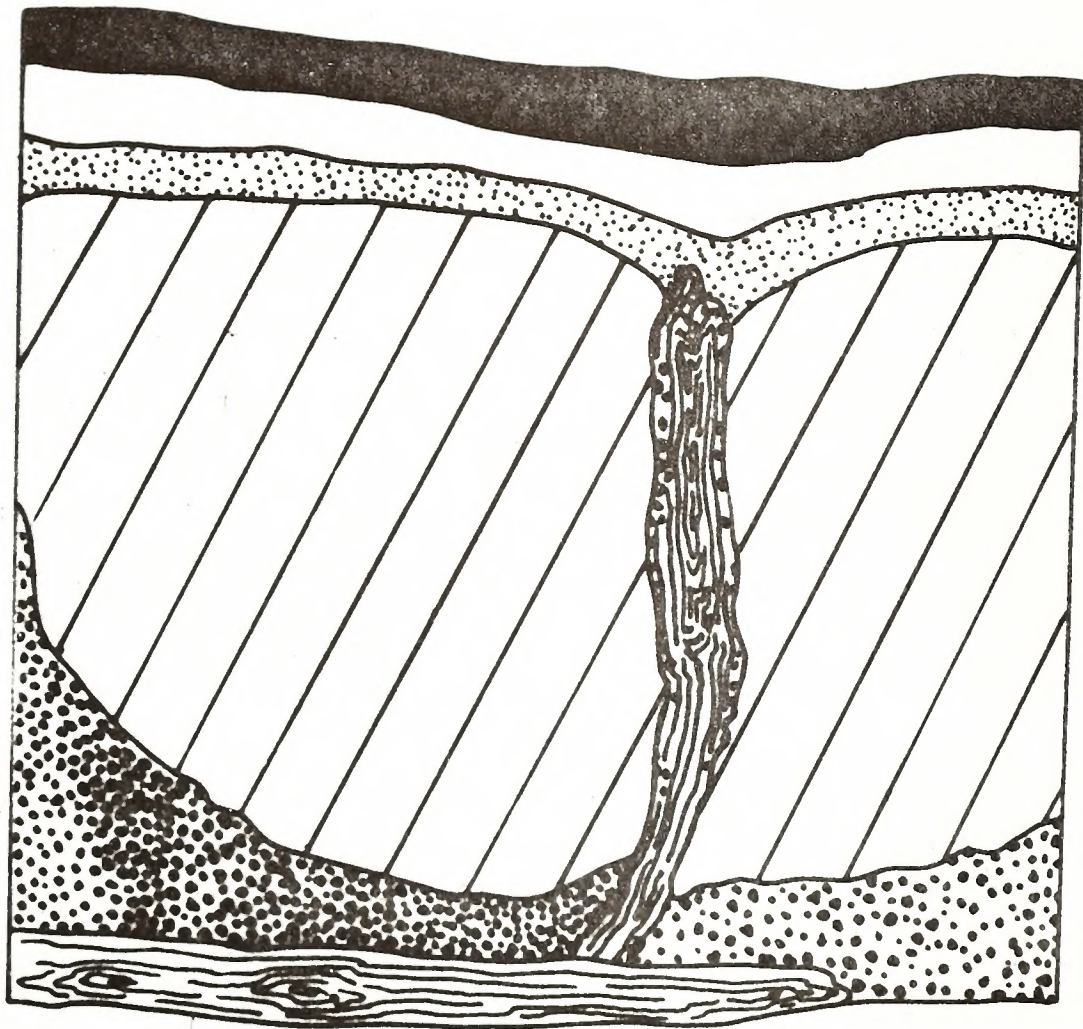
SOUTH PROFILE

- LEVEL A
- LEVEL B
- ▨ LEVEL C
- ▩ LEVEL D
- LEVEL E



Figure 40 (C)

COMMISSARY STRUCTURE TEST EXCAVATION



WEST PROFILE

- LEVEL A
- LEVEL B
- ▨ LEVEL C
- ▩ LEVEL D
- ▧ LEVEL E

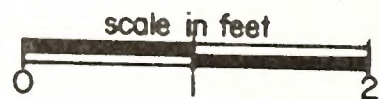


Figure 40 (D)



Figure 41. Top view of the excavation showing strata, charred wood, and exposed timbers.

wide trench excavated to a depth of approximately 5 feet. Sills constructed of 6-inch by 8-inch pine timbers were laid along the trench floor and separated by 5-foot-long joists of approximately the same dimensions. Wall studs, placed on 3-foot centers, appear to have been placed directly on top of the sills and secured by mortice and tenon joints. While the length of these studs could not be established, a height of approximately 5 feet was projected from the remains of a stud in the southwest corner of the excavation (Fig. 42). There, nominal structural evidence also indicated that a top plate similar to the sills connected the studs along the length of the structure and supported a flat roof composed of 1 1/2 inch-thick planks that varied in width between 6 inches and 10 inches. These were found to have been placed perpendicular to the plates.

The presence of an unusually heavy beam among the remains of the roof sheathing may be an indication that joists were employed to reinforce the walls against the pressure of backfill. Wall sheathing appeared to have been slipped in behind the studs and held in place by the force of backfill. Like the roof sheathing, the flooring was installed perpendicular to the length of the structure



Figure 42. East wall of test excavation

(Fig. 43). Only occasional nails and spikes were employed in securing wall, roof, and floor planks. As might be expected, fill from the construction trench appeared to have been utilized to fortify the wood roof.

Evidence concerning the destruction of the "commissary" indicated that the section under investigation collapsed as a result of both fire and explosion. Interior faces of all wood found in its original position preserved evidence of extensive fire damage. With the exception of portions of the flooring, all structural wood was found to be charred. In addition, much of the roof and upper walls was found to have been carried away. Evidence of one or more explosions was found at lower levels in the excavation. In the southeast corner, wall studs were observed to have been forced out and away from the sill, and wall sheathing planks had been splintered and forced into the construction trench backfill. The remains of several exploded rifled projectiles were found below a similar disturbance in the floor planks along the south wall of the excavation. With the exception of structural material, artifacts from the excavation consisted of projectile fragments, grape, and canister shot. In the upper strata these findings consisted almost entirely of shell and projectile fragments.



Figure 43. Overhead view of test excavation showing floor timbers

On undisturbed surfaces of the flooring, solid shot, grape, and crushed but complete tins of canister shot for 6- and 12-pounder cannon were discovered along with additional fragments and fuses from explosive ordnance. While the test excavation produced a total of more than 300 pounds of ordnance, no other artifacts indicative of area usage were found.

Analysis of the data generated by the test excavation supported obvious conclusions and, at the same time, raised some interesting questions. From an examination of the structural remains it was obvious that the "commissary" structure was designed to utilize available materials. Rigid specifications were not adhered to in design and construction. As was generally the case throughout the South, construction materials at Fort Branch were in short supply. Nails and spikes were employed only where essential. Timber did not have to conform to standard size as long as it performed a necessary function.

Examination of the artifacts produced by the investigation provided interesting insight into the function of the structure. Although identified as a "commissary" on contemporary maps of the fortification, the structure seemed to have been utilized as a magazine for artillery

protecting the southeastern land face. While it is possible that the explosive ordnance was brought into the structure for the purpose of destroying it, there would have been nothing to gain by including solid shot, grape, and canister.

The fact that no artifacts associated with other use patterns were found seems to add credence to the theory that at least a portion of the structure was utilized as a magazine. The presence of fragments from unfired rifle projectiles indicated that ordnance may have been used to destroy the "commissary." Additional and more detailed examination of the fragments may establish whether Confederates under the command of Colonel Pool or Union gunboat crews under the command of Lieutenant Commander Thornton were responsible for the destruction.

PRESERVATION

Preservation of the Fort Branch artifacts was carried out in three phases: cleaning and preservation of the cannon, preservation of small artifacts, and disassembly, preservation, and reassembly of the cannon carriages. Due to lack of handling and hauling facilities for heavy objects, it was necessary to set up a field preservation facility at Fort Branch for preserving the cannon. The smaller artifacts and the cannon carriages were transported to the Fort Fisher Preservation Laboratory near Wilmington, North Carolina, for treatment.

After the cannon were dismounted from their carriages, they were examined carefully and identifying features and markings were recorded. They were tentatively identified as a 24-pounder smoothbore, a 4.62-inch rifle, and two 6-pounder fieldpieces (Fig. 44).

During preliminary cleaning, mud and clay were washed from the bores of the guns. Some compacted clay remained in the rear of the bores. A thin copper-nickel tube was pressed through this to the full extent of the bore to insure that the cannon were not loaded. A coal tar substance was observed on the cannon covering approximately 50 percent of their surfaces. This coating appeared

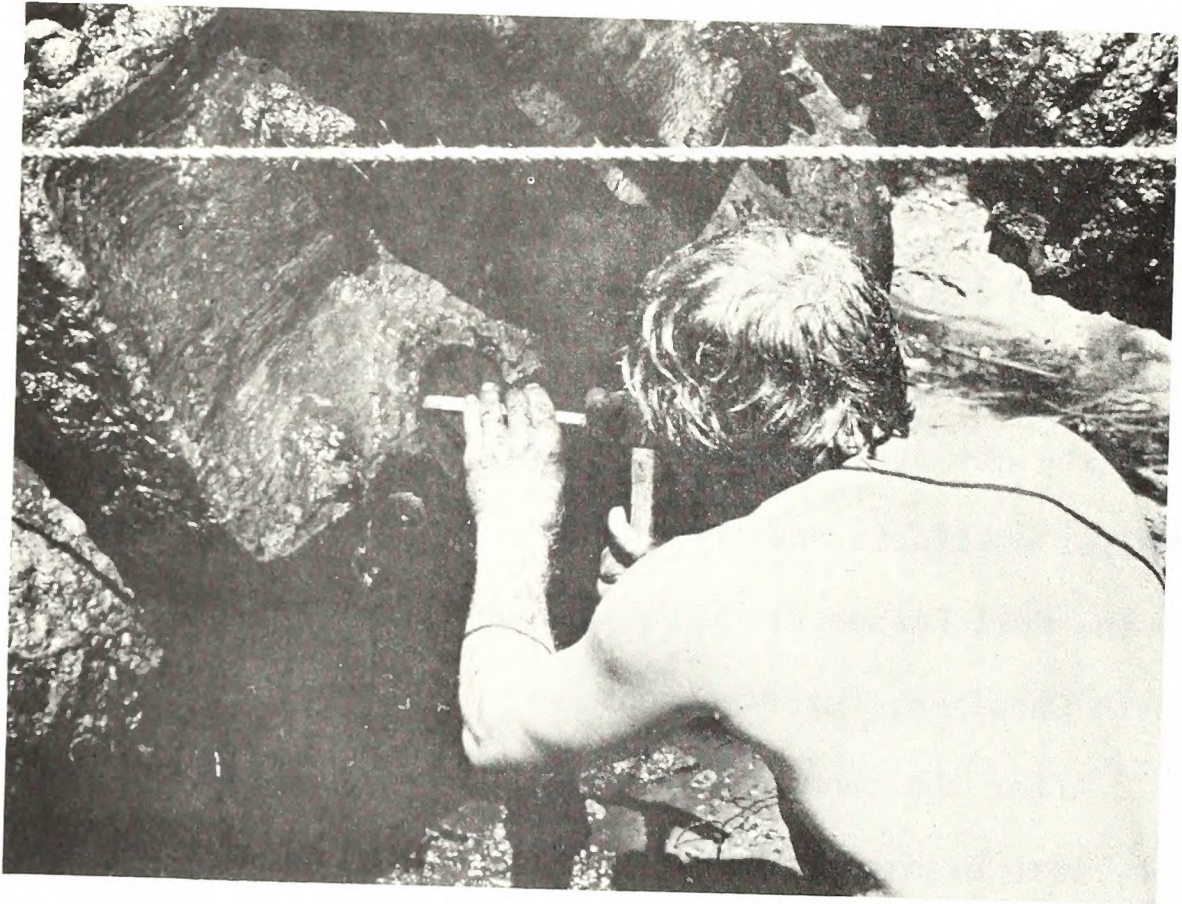


Figure 44. Dismounting cannon from carriage

thicker on the underside of the tubes near the breech (Fig. 45).

Generally the cannon tubes were found in an excellent state of preservation considering the period of submer-
sion in the river. The surfaces of the 6-pounder and
the 24-pounder were oxidized to a depth of approximately
1/8 inch. The 4.62-inch rifle was oxidized to a greater
extent, especially around the muzzle and band areas.
Despite the deterioration, the surfaces of the tubes re-
tained their structural integrity. Lathe and mold marks
were prevalent in some areas on all the tubes. This
state of preservation is probably attributable to lack of
water salinity. Testing of a sample of water from the
Roanoke River adjacent to Fort Branch indicated salinity
less than 15 parts per million.

The cannon tubes were placed in steel tanks on wooden
blocks to insulate them from the tanks (Fig. 46). In
preparation for electrolysis, stainless steel strapping
material was wrapped around the cannon tubes and secured
to the negative pole of an electrical current rectifier.
The positive pole of the rectifier was secured to the
metal tank. A 5 percent solution of sodium hydroxide and
tap water was then mixed in the tank to serve as the

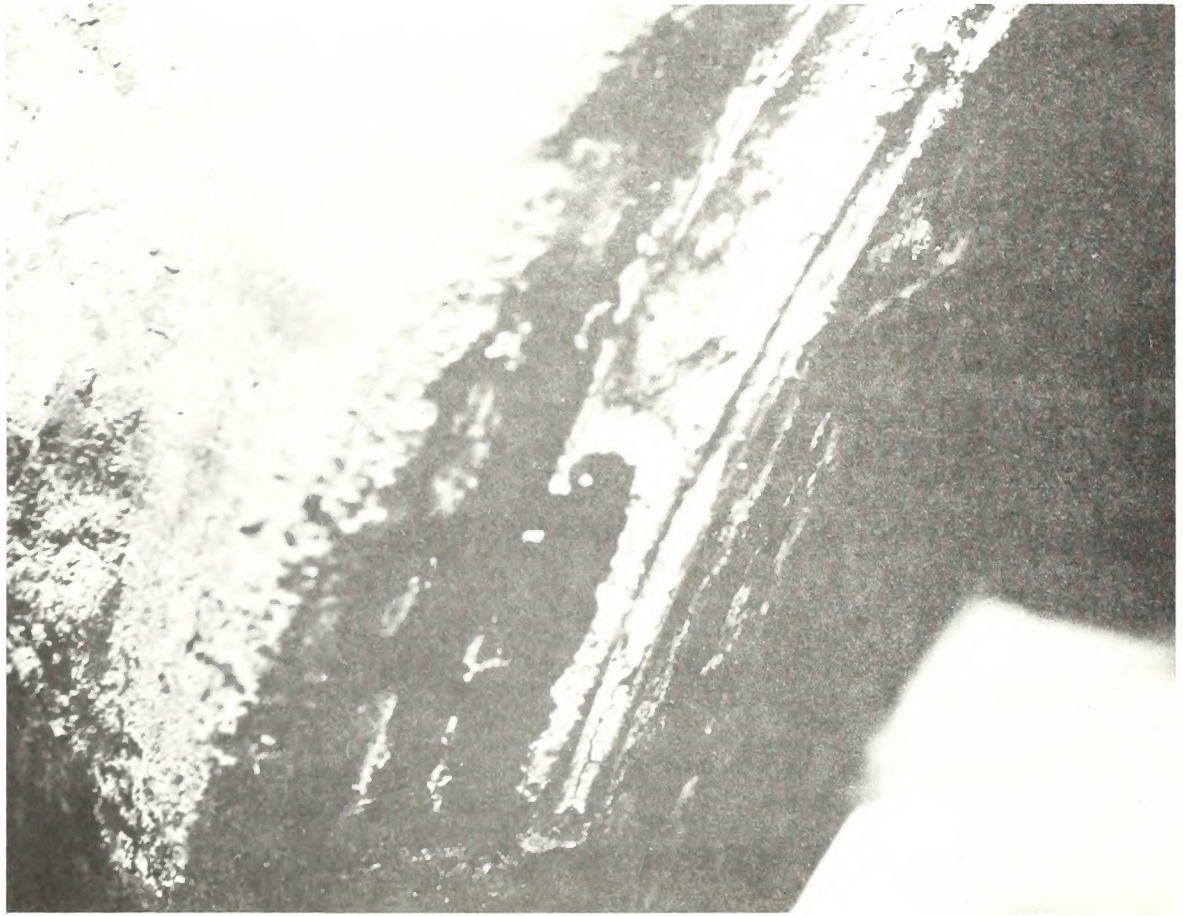


Figure 45. Coal tar coating on muzzle of cannon



Figure 46. Preparing guns for electrolysis

electrolyte. The electrolytic cleaning was carried out at 12 volts and approximately 70 amperes for seven days. Absence of iron chlorides in the metal allowed the use of higher amperage, thereby shortening the cleaning process. The electrolyte was then drained from the tanks and the loosened rust and debris brushed away with bristle and wire brushes. Chipping away of persistent rust was required on the bank area of the 4.62-inch rifle.

After electrolytic cleaning, the cannon tanks were refilled with clean tap water several times. The tubes were brushed between water changes to remove traces of electrolyte. Finally the last bath of water in the tanks was boiled to flush any remaining electrolyte from the bores of the tubes (Fig. 47). This was accomplished by building a fire under the tanks. This step usually required 3 to 4 hours. After boiling, the tanks were drained immediately to allow moisture to evaporate from the cannon surfaces. A rust inhibitor was then applied to prevent surface rusting during the drying step that followed.

Drying was facilitated by constructing a cover of sheet metal over the tanks and placing four small gas burners underneath. Temperature inside the tanks reached

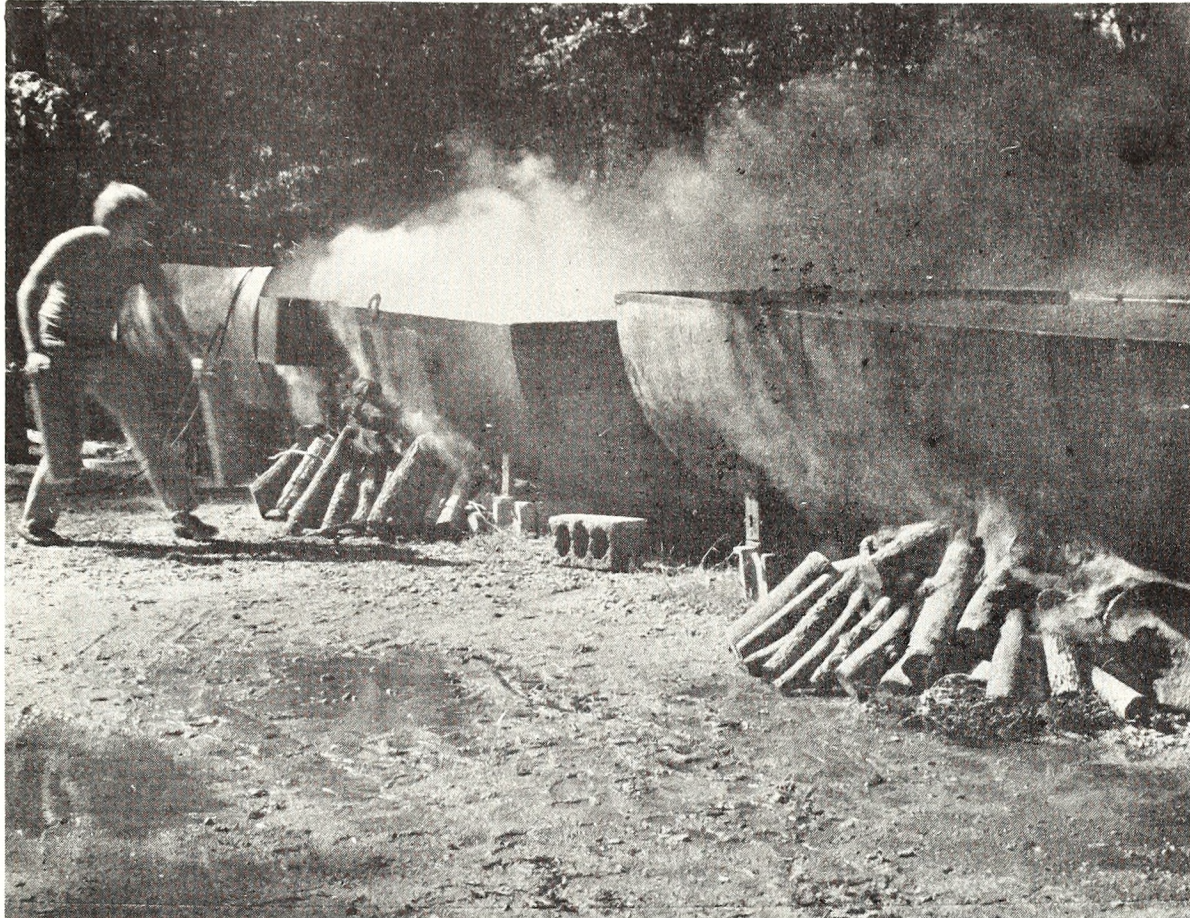


Figure 47. Boiling cannon to remove traces of electrolyte

220 degrees fahrenheit in approximately 20 minutes and was held there 48 hours. The tubes were then removed from their tanks and transported to the nearby Butler Building. Lack of a lifting device prevented periodic cleaning of the bores of the cannon during electrolysis and rinsing, so the bores were scrubbed out by hand prior to painting. This final mechanical cleaning revealed a broken off sponge and wooden wedge in the bore of the 6-pounder with the rear brass sight mount.

Finally, all four cannon were brushed with two coats of flat black enamel (Fig. 48). The three additional cannon recovered illegally in 1972 were touched up and coated with flat black enamel. They were preserved in a similar fashion shortly after recovery and have been on display in Hamilton since then. All of the heavy cannon were placed together within the Butler Building for storage.

Small artifacts consisted primarily of materials related to Civil War ordnance. Other items consisted of iron ring fasteners used in the logging business, miscellaneous wooden pieces, and a large assortment of modern items related to farming activity. The small artifacts were sorted according to condition, composition, and size. Modern materials were separated and no treatment applied.



Figure 48. Applying flat black enamel paint

The artifact inventory was checked and many items were more accurately identified.

Routine cleaning processes were applied to the metallic artifacts (Fig. 49). Small fragile items having surface detail were cleaned by electrolytic reduction. This was followed by gentle brushing to remove oxidation, immersion in several 20-minute alternate hot and cold baths of distilled water, and coating with a phosphate rust inhibitor before drying at 225 degrees fahrenheit overnight. This treatment was completed with an application of epoxy resin or flat black enamel paint. Several heavier items having little or no surface detail were manually cleaned by chipping and picking decayed areas or chemically cleaned with a tannic and phosphoric acid solution. Afterwards they were washed, boiled, dried, and coated in the manner stated above.

Two processes were employed in treating small organic materials. Smaller, delicate materials were dried in acetone for approximately one week to remove the inter-cellular water before being placed in Tetraethyl Orthosilicate (TEOS). During submersion for several days, silica microcrystals formed, reinforcing the cellular walls in the wood.¹ Linseed oil was then applied in some cases to



Figure 49. Stand of grape following preservation treatment

darken the wood, which was lightened somewhat by the TEOS treatment.

Heavier wooden items suffering little degradation were air dried approximately 24 hours until surface water was evaporated, followed by submersion in, or multiple applications of, raw linseed oil mixed with 5 percent pentachlorophenol to ward off wood-eating insects. After a drying period of several weeks to allow the linseed oil to set, some of the materials received a final application of clear flat vinyl coating to insure an aesthetically pleasing surface.

The five recovered gun carriages were stored in a farm pond near Fort Branch for approximately one year before transportation to the Fort Fisher Preservation Laboratory for treatment. The carriages were placed under sprinklers to keep them wet while being disassembled.

Disassembly was a meticulous and painstaking process where effort was made to prevent damage to the carriage parts (Fig. 50). Penetrating oil was applied to many of the nuts and bolts to assist in their removal. Nuts that were particularly hard to remove were loosened by shock. These nuts were wrapped with cloth to prevent the wrench from damaging them. Sharp hammer blows on the handle of



Figure 50. Disassembly of carriage

the wrench jarred the nuts loose. As the carriages were disassembled, sketches of them were made. Each carriage part was individually tagged with a number and noted on the sketches to ensure that all parts could be reassembled accurately after preservation (Fig. 51).

During the disassembly, several interesting phenomena were observed. Red paint still remained on two of the wheel hubs. Almost all of the axletrees still contained grease. Fingerprints were found in the hardened grease on one axletree (Fig. 52). One large carriage was found to have brass nave boxings.

All metal parts of the gun carriages were sandblasted to bare metal (Fig. 53). They were dipped in rust inhibitor, blotted, and blown dry to prevent surface rusting during the drying step that followed. The metal parts were placed in an oven and dried at 225 degrees fahrenheit overnight. After cooling, all parts were painted with one coat of flat black enamel.

Wooden parts of the carriages were treated similarly to the small wooden artifacts discussed earlier. Badly damaged parts were soaked in acetone to remove intercellular water before immersion in TEOS. Applications of raw linseed oil followed, with a final coat of clear flat vinyl. The



Figure 51. Sketching carriage during disassembly



Figure 52. Fingerprints found on axle tree of carriage



Figure 53. Sandblasting metal carriage parts

majority of the wooden carriage parts were air dried until surface moisture had evaporated before numerous coatings of raw linseed oil were applied. Insecticide was added to the linseed oil to prevent insect attack. When the wooden parts could absorb no more linseed oil, they were allowed to dry several weeks before a final coating of clear flat vinyl was applied.

¹H.T. Erwin and G. Wesson, "A New Method For the Preservation of Waterlogged Archaeological Remains: Use of Tetraethyl Orthosilicate," Pacific Northwest Wet Site Wood Conservation Conference, Neah Bay, Washington, September 19-22, 1976, pp. 49-50.

ARTIFACT INVENTORY

Tube and Carriages

Artifact: 4-inch Blakely rifle, iron, 18-pounder
Bore: diameter 4 inches; length 70 inches
Length O/A: 83 inches
Trunnions: diameter 3 7/8 inches; length 3 1/2 inches
Markings: none
Condition: excellent
Remarks: 6 x 6 hook slant rifling; similar to a
weapon capture near Fort Fisher and on
display at the Washington Navy Yard

Figure 54

Page 129

Carriage: Blakely rifle was mounted on an iron
English field carriage. Both cap squares
and nave (hub) boxings were intact upon
recovery. However, the nave boxings were
stolen while carriage was on display in
Hamilton. Carriage has a split trail
stock joined at the trail plate and a
sliding elevating device

Artifact: Confederate iron 6-pounder, smoothbore
Bore: diameter 3 3/4 inches; length 54 1/4 inches
Length O/A: 66 inches
Trunnions: diameter 3 1/2 inches; length 3 1/2 inches
Markings: none
Condition: excellent
Remarks: This gun has a brass rear sight mount and an iron foresight. It closely resembles existing Confederate copies of the United States bronze Model 1841 smoothbore in bore and overall length

Figure 55

Page 130

Carriage: The 6-pounder smoothbore with the brass rear sight mount was mounted on a wooden field carriage. This carriage was recovered without wheels and had no trail stock behind the cheeks. Both cap squares and wheel hubs were on the carriage when recovered. Brass elevating screw #0326, found separately, is now fixed to the carriage. Also, trail stock fragment #0046 is presently displayed with this carriage. It, too, was found separately. Approximately 36 inches of the trail stock was broken off when the carriage was thrown into the river and was not recovered

Figures 56, 57

Pages 131, 132

Artifact: Confederate iron 6-pounder, smoothbore. This gun is identical to the other 6-pounder gun, except that it lacks a brass rear sight mount and has a rear sighting groove

Figure 58

Page 133

Carriage: The 6-pounder gun with the rear sighting groove was mounted on a wooden field carriage. When recovered, the right wheel (#0402) was attached, but only had six spokes intact. Only the hub remained on the left side. Also, the trail stock was broken off in back of the cheeks. Both cap squares were intact. At present, brass elevating screw #0973, found separately, is fixed to the carriage. Also, trail stock fragment #0185 is displayed with this carriage, although it, too, was found separately. It can be safely assumed that the two elevating screws and two small trail stock fragments found during the excavation fit the two field carriages. However, it is impossible to determine which parts fit which carriage. As was the case with the other wooden field carriage, this carriage is missing approximately 36 inches of its trail stock between the cheeks and the recovered fragment

Figures 59, 60

Pages 134, 135

Artifact: Banded 4.62-inch iron Confederate rifle, Brooke type

Bore: diameter 4 5/8 inches; length 108 inches

Length O/A: 122 inches

Trunnions: diameter 5 3/4 inches; length 5 inches

Markings: left trunnion 1863; right trunnion JRA/TF; muzzle face 720; back of band No. 160

Condition: excellent

Remarks: This rifle closely resembles a 4.62-inch single-banded siege and garrison rifle mentioned by Ripley, Artillery and Ammunition of the Civil War, pp. 130). It is rifled in the 7 x 7 Brooke hook-slant design and was manufactured in 1863 at Tredegar Foundry (TF) by John Reid Anderson (JRA), who was the major manufacturer of Brooke rifles during the war. Since the bore diameter does not match any standard Parrot designs, and since it is rifled in the Brooke mold, it seems best to tentatively identify the rifle as a Brooke, rather than a Confederate Parrot.

Figure 61

Page 136

Carriage: The 1863 rifle was mounted on a wooden siege and garrison carriage. It was recovered with the right hub, both cap squares, elevating screw, and left nave boxing intact. The trail stock is in two parts, each part running lengthwise for the entire length of the carriage. Eighteen inches of the trail stock broke off during disassembly, but this piece is on display with the carriage at present.

Artifact: 32-pounder, naval, Model 1846, iron,
banded and rifled

Bore: diameter 6.42 inches; length 107 inches

Length O/A: 126 inches

Trunnions: diameter 6 1/4 inches; length 6 inches

Markings: left trunnion PCS; rear sight mounting
bracket #628; right trunnion 32, 1849

Condition: excellent

Remarks: This gun was cast in 1849 and was probably
banded and rifled at Tredegar Foundry
following its capture by Confederate
forces. Rifling is in the Brooke design
(7 bands, 7 grooves)

Figure 62

Page 137

Carriage: This tube was recovered without a carriage

Artifact: 24-pounder, Model 1819, iron, smoothbore
Bore: diameter 5 13/16 inches; length 108 inches
Length O/A: 124 inches
Trunnions: diameter 5 3/4 inches; length 5 inches
Markings: left trunnion 1828; right trunnion J.M.C.F.;
muzzle face J.B. No. 158
Condition: excellent
Remarks: This gun was cast at Columbia Foundry (C.F.)
by John Mason (J.M.) in the 1819 design.
John Barnwell (J.B.) was a Confederate
ordnance inspector who possibly numbered
the gun after it was captured by Confeder-
ate forces.

Figure 63

Page 138

Carriage: This gun was mounted on a wooden siege and
garrison carriage with a one piece trail
stock. When recovered, the nave boxings,
elevating screw, cap squares, and wheel
chock were all intact. Neither wheel hub
was found. This carriage is in the best
condition of all six wooden carriages
recovered at Fort Branch

Figures 64, 65

Pages 139, 140

Artifact: 24-pounder, Model 1819, iron, smoothbore
Remarks: Identical to other 24-pounder except for #164 marked on muzzle face. This gun was possibly captured at the same time as the #158 gun and also numbered by John Barnwell

Figure 66

Page 141

Carriage: This gun was mounted on a wooden siege and garrison carriage with a two-part trail stock similar to the trail stock from the 4.62-inch 1863 rifle carriage. However, this carriage has several characteristics that distinguish it from the other three wooden siege and garrison carriages recovered at Fort Branch. It does not have an elevating screw; it has cutaway cheeks and trunnion plates; and it has different rondelles between the cheeks and trail stock than the other three wooden siege and garrison carriages have. This carriage was recovered with both cap squares and both hubs intact but was lacking the rear section of the trail stock. However, trail stock fragment #0035, found separately, seems to match this carriage and is presently displayed with it

Artifact: 32-pounder, naval, iron smoothbore breech fragment

Markings: C.A. and Co. No. 54. 47. 27

Remarks: No other parts of this gun were found during the survey and recovery project. The markings indicate that it was originally a United States weapon manufactured at Cyrus Alger and Company in Boston, Massachusetts

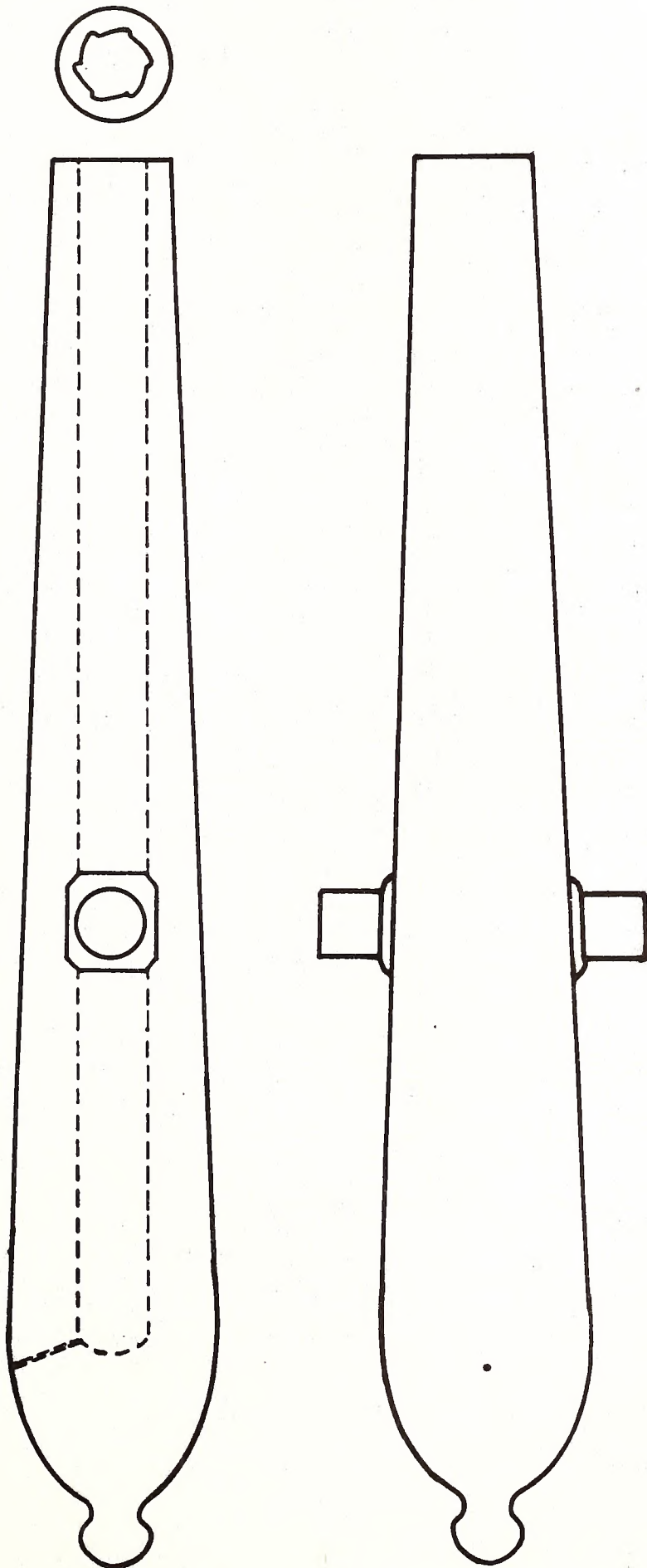
Figure 67

Page 142

Artifact: Wooden siege and garrison carriage

Remarks: Found without a tube, this carriage probably mounted a third 24-pounder smoothbore or a 32-pounder in traveling position. It has a single piece trail stock and was recovered with elevating screw, wheel chock, and both hubs intact. The nave boxings inside the hubs are brass, which distinguishes this carriage from the other six that were recovered. The cap squares were not intact upon recovery, but cap square #0001, found separately, fits this carriage

Figure 54 4-inch Blakely rifle
Scale: 1/12



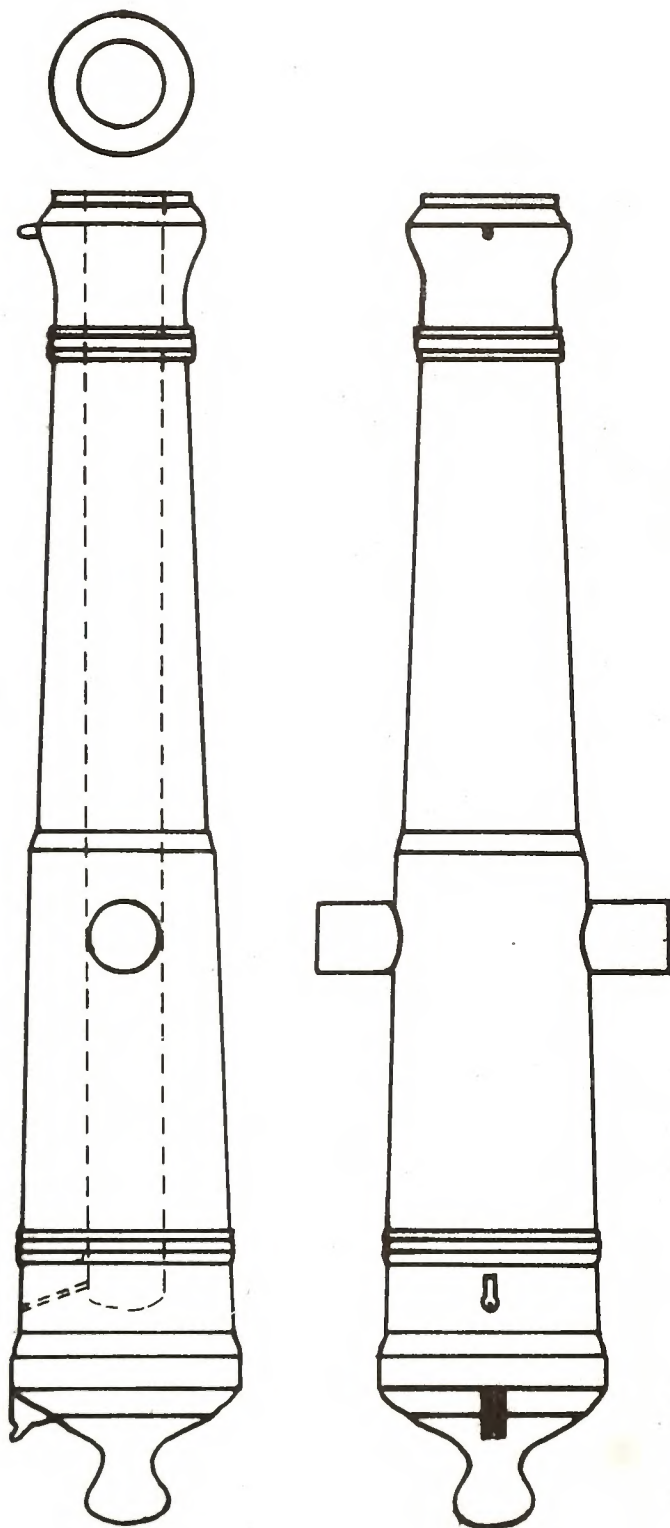


Figure 55 6-pounder smoothbore with brass rear sight mount
Scale: 1/12

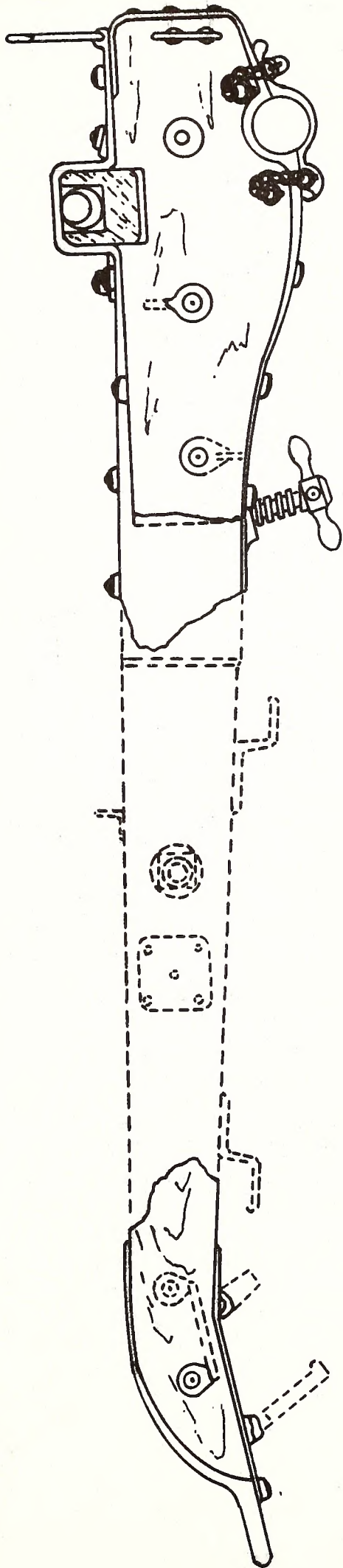


Figure 56 Left side view of carriage for 6-pounder
with brass rear sight mount
Scale: 1/12

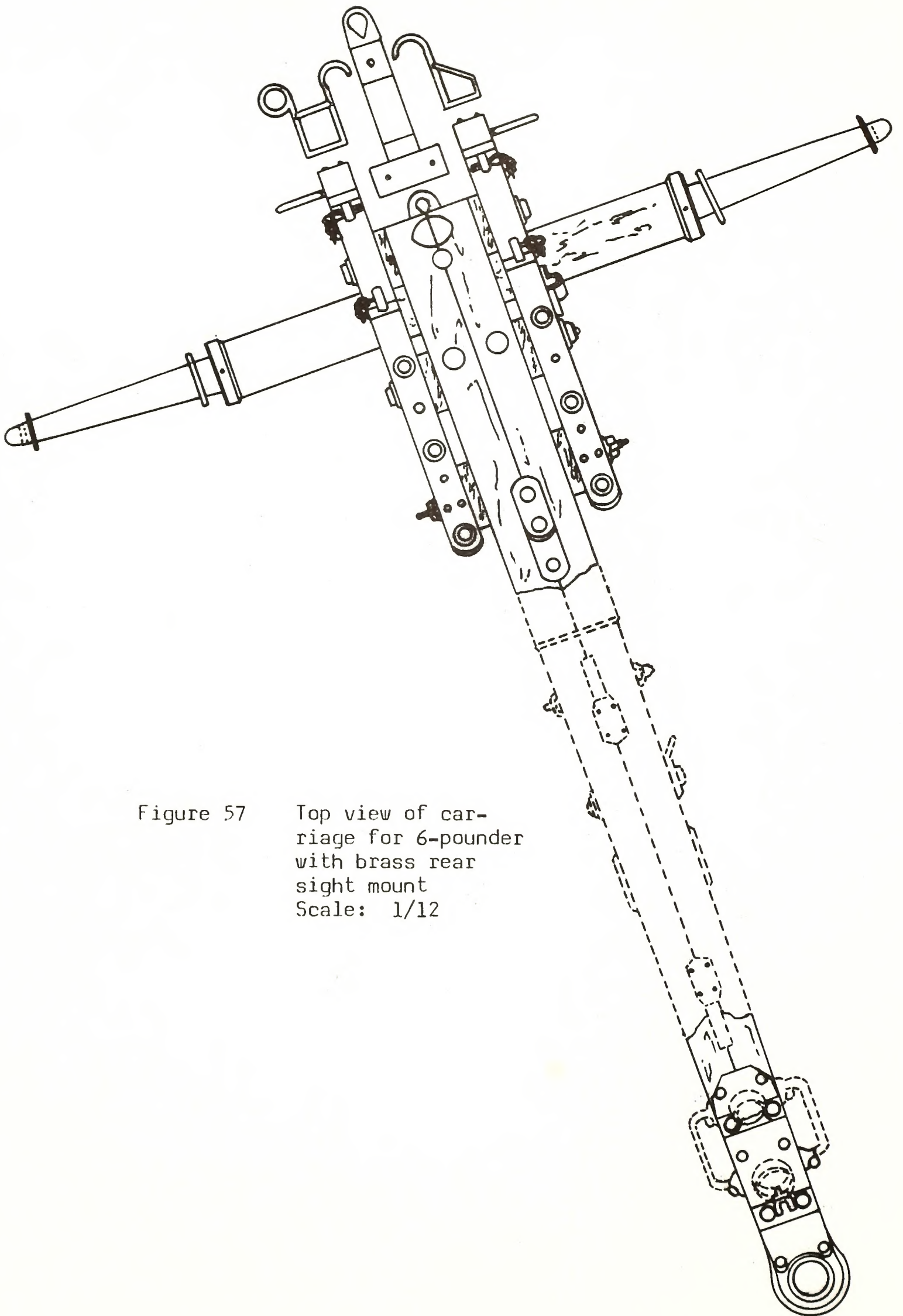


Figure 57 Top view of carriage for 6-pounder with brass rear sight mount
Scale: 1/12

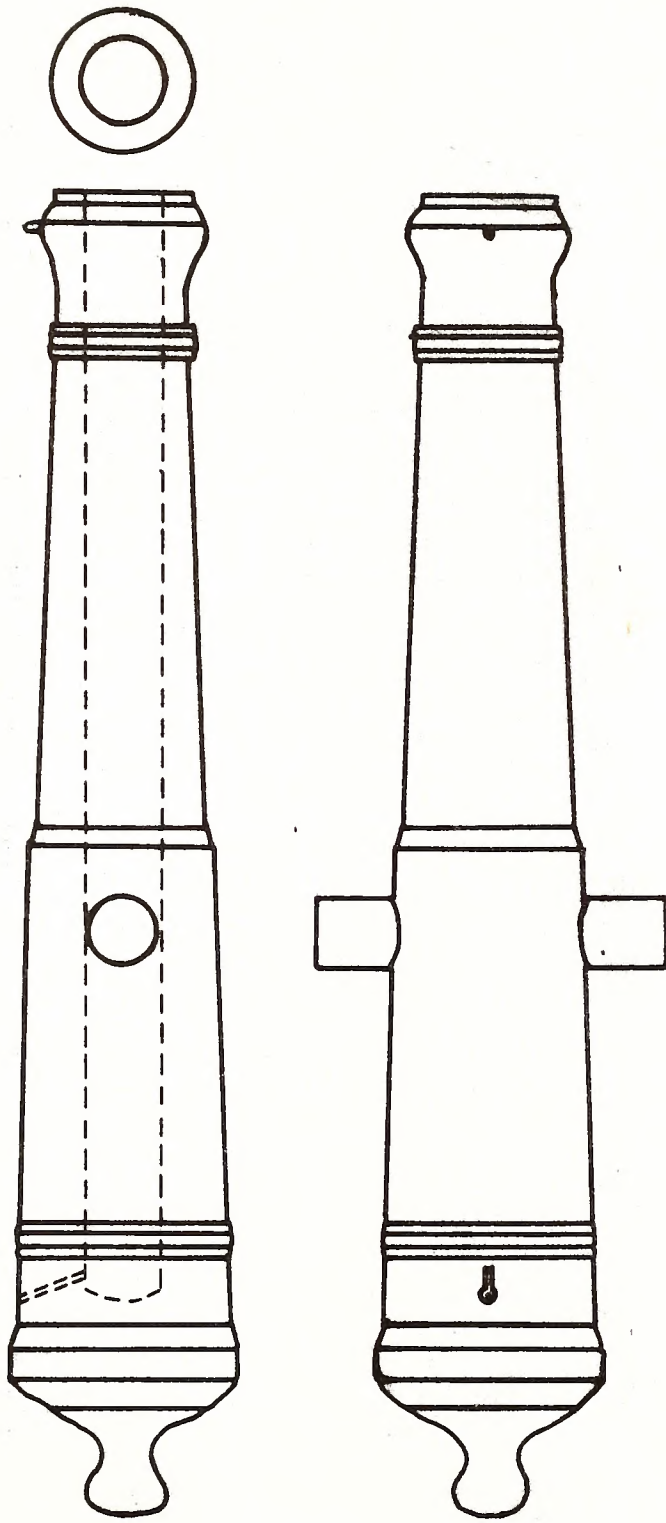


Figure 58 6-pounder smoothbore with rear sighting groove
Scale: 1/12

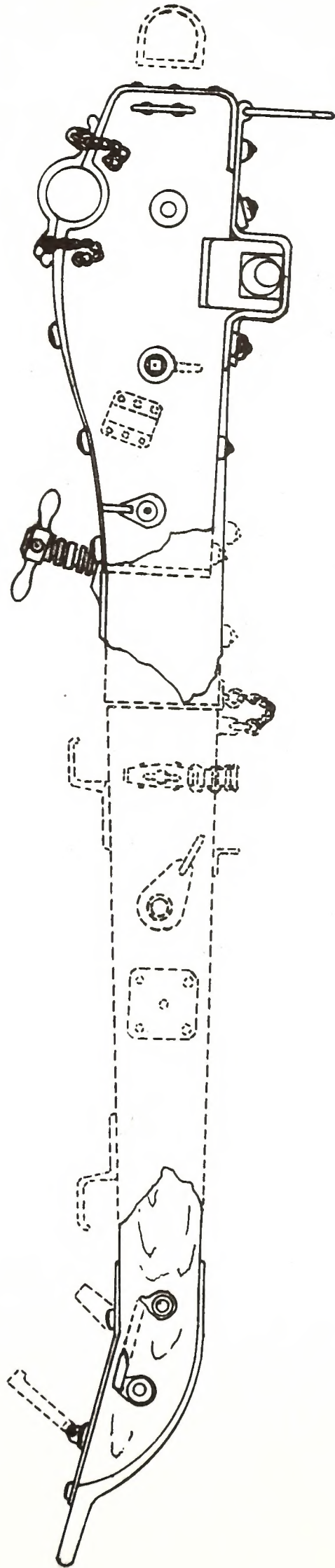


Figure 59 Right side view of carriage for 6-pounder
with rear sighting groove
Scale: 1/12

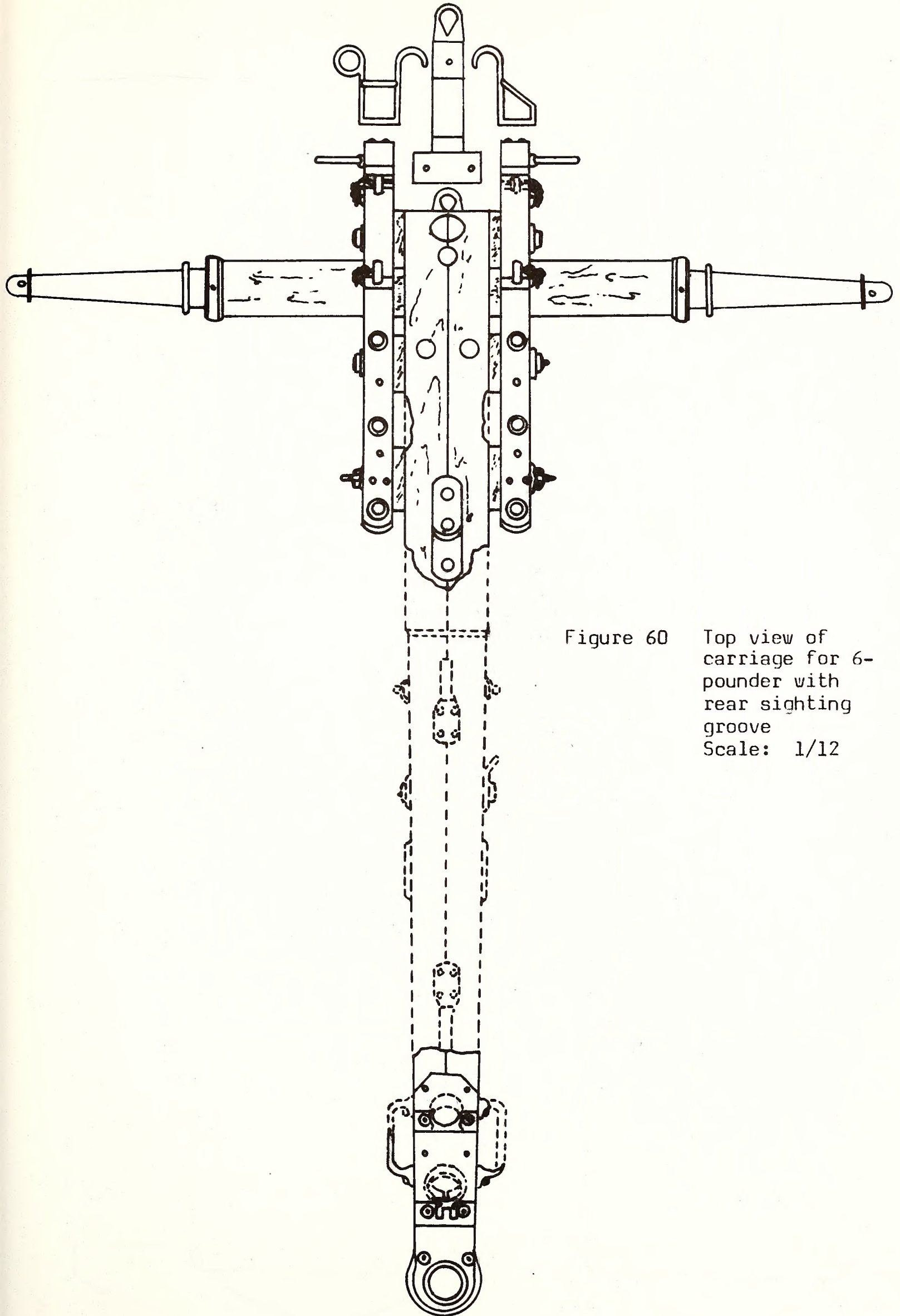


Figure 60 Top view of carriage for 6-pounder with rear sighting groove
Scale: 1/12

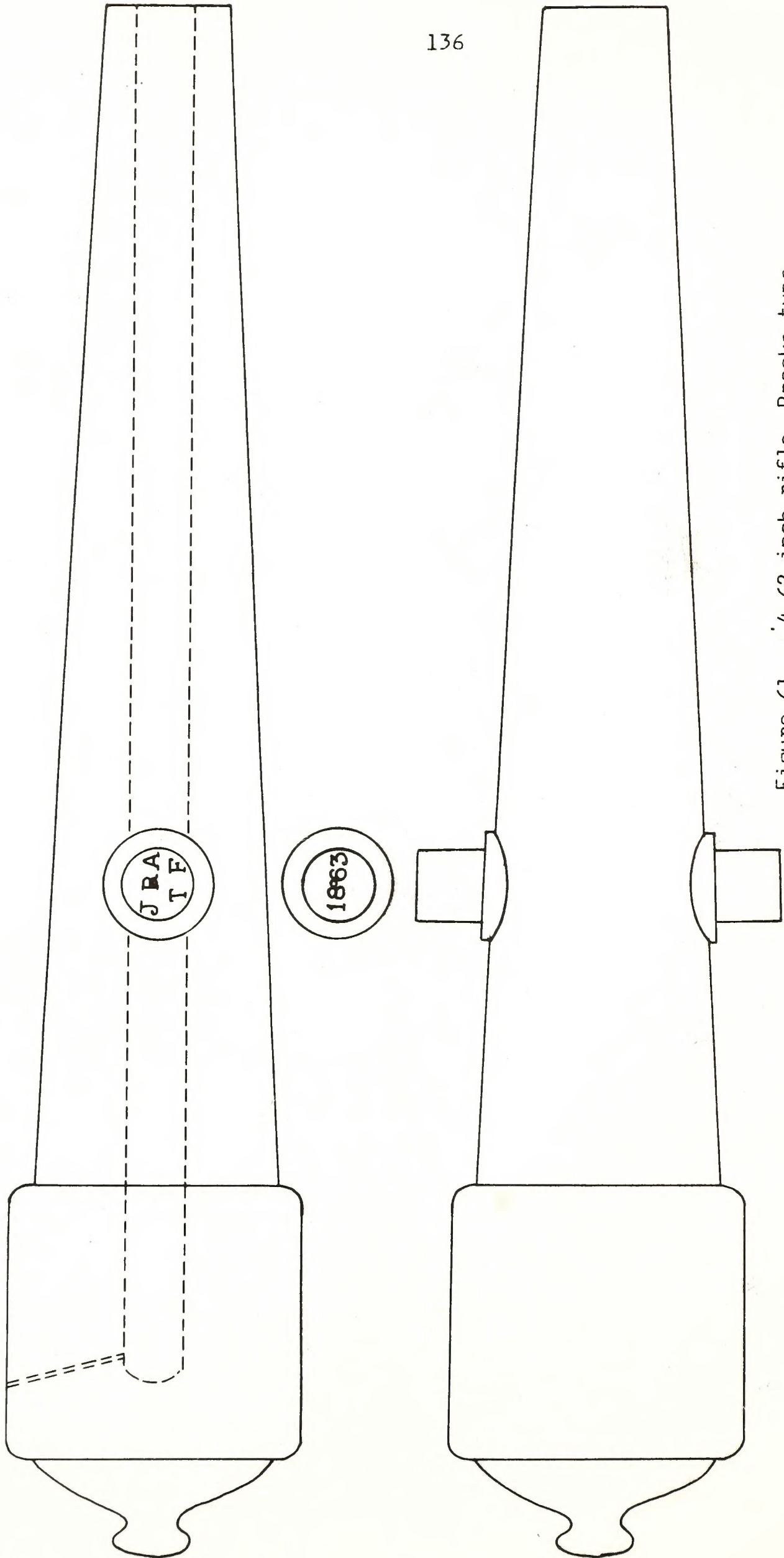


Figure 61 4.62-inch rifle, Brooke type
Scale: 1/12

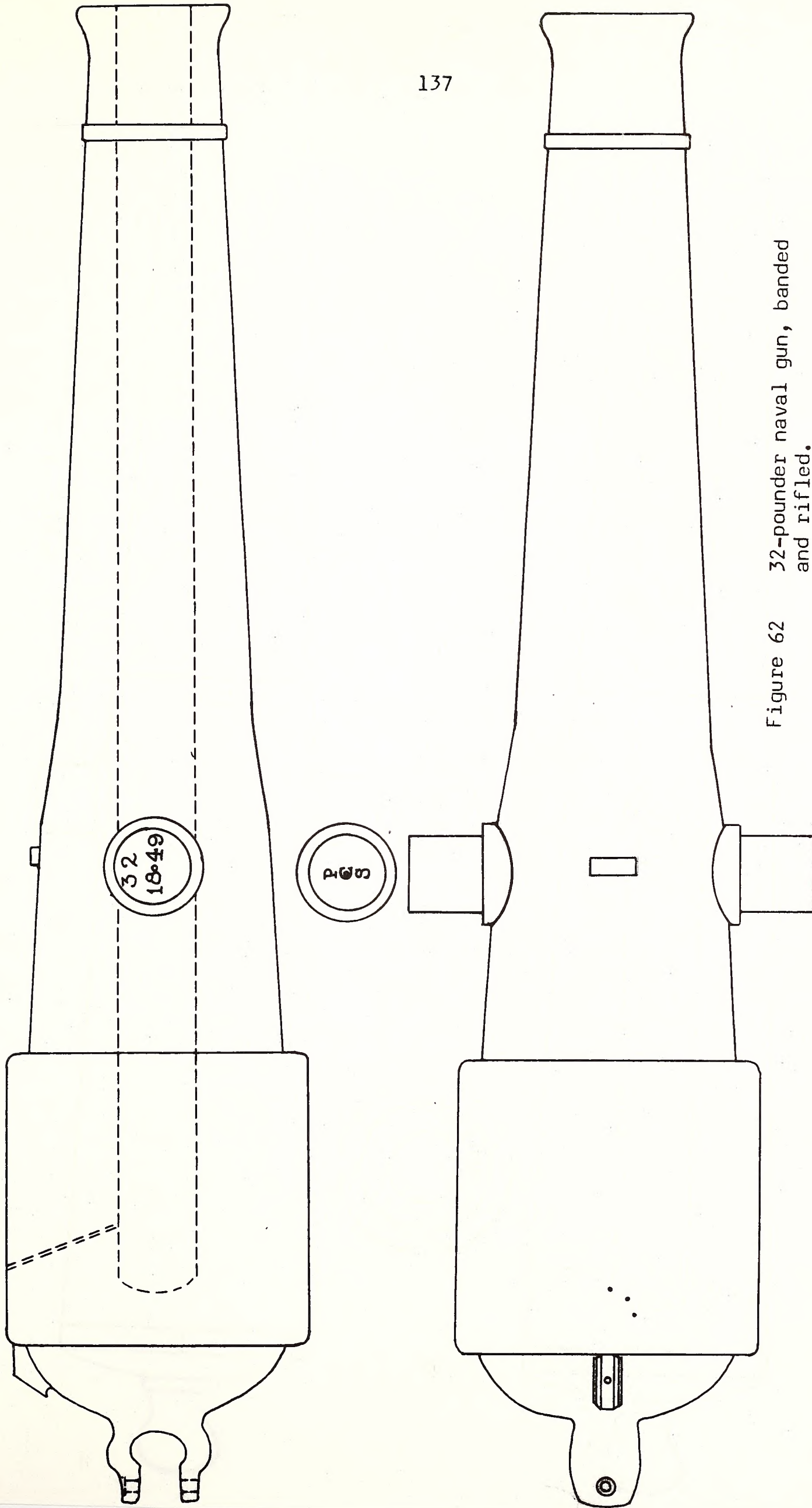
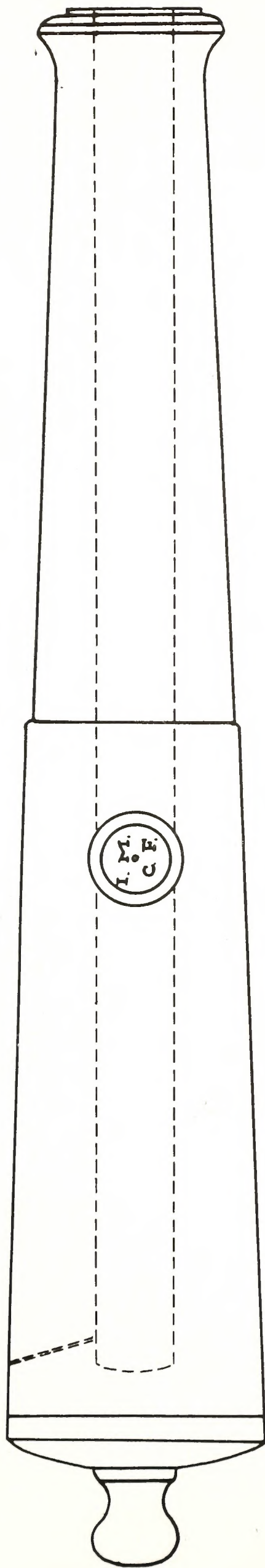


Figure 62 32-pounder naval gun, banded and rifled.
Scale: 1/12



138

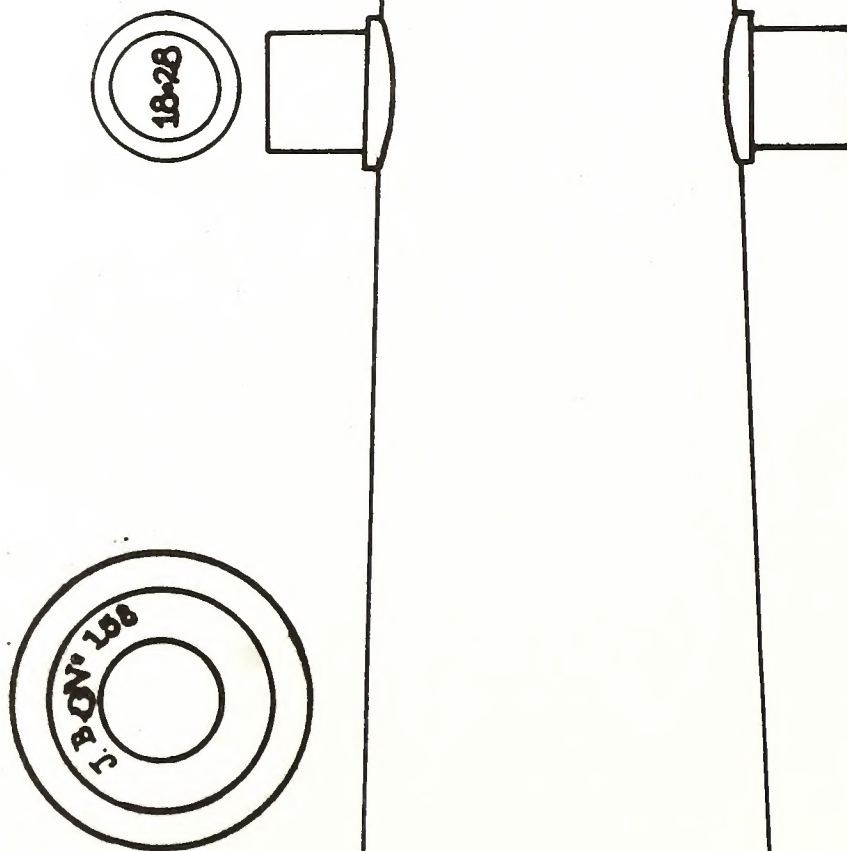


Figure 63 24-pounder smoothbore, No. 158
Scale: 1/12

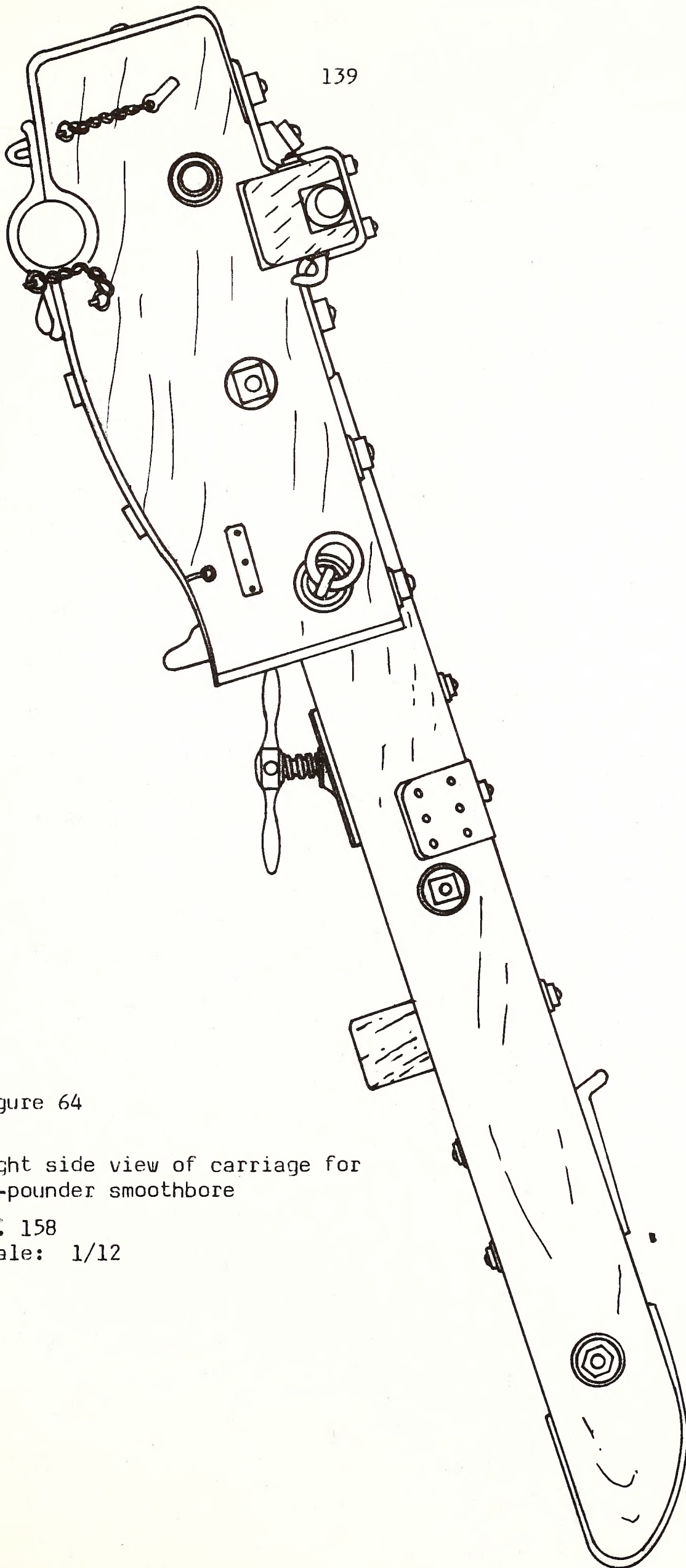


Figure 64

Right side view of carriage for
24-pounder smoothbore

No. 158

Scale: 1/12

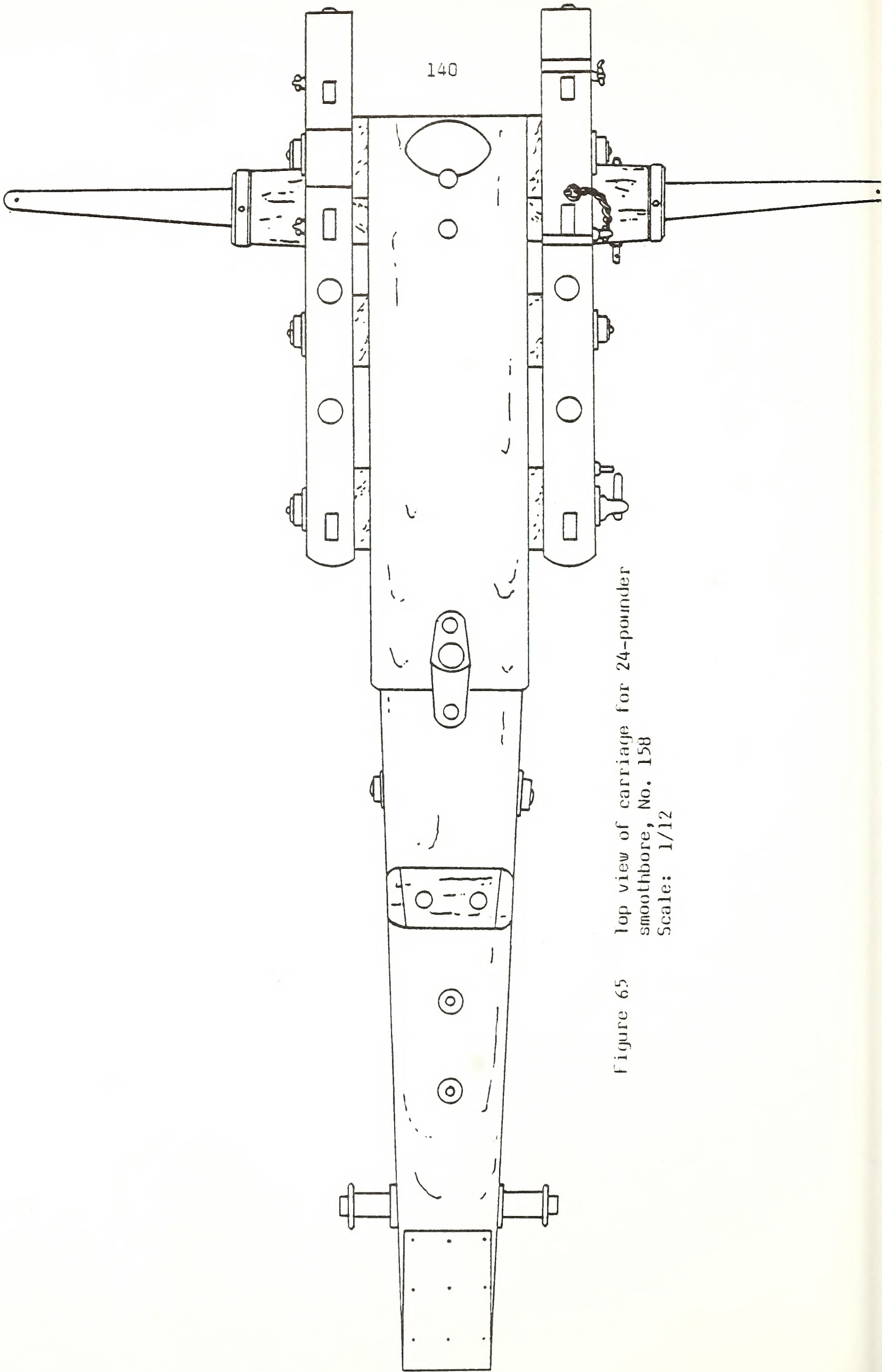


Figure 65 Top view of carriage for 24-pounder
smoothbore, No. 158
Scale: 1/12

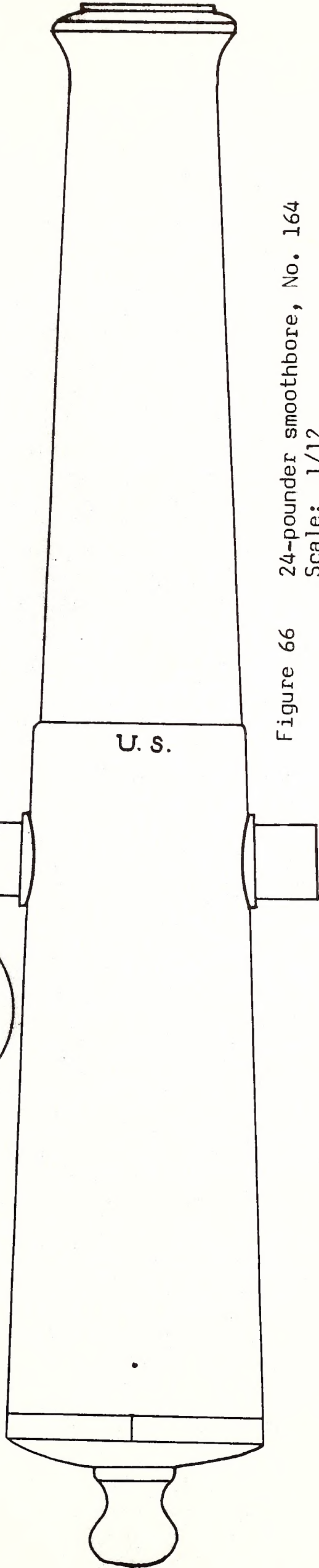
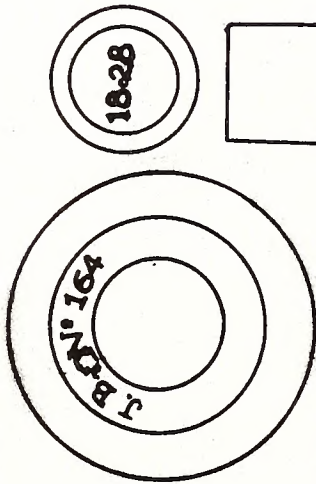
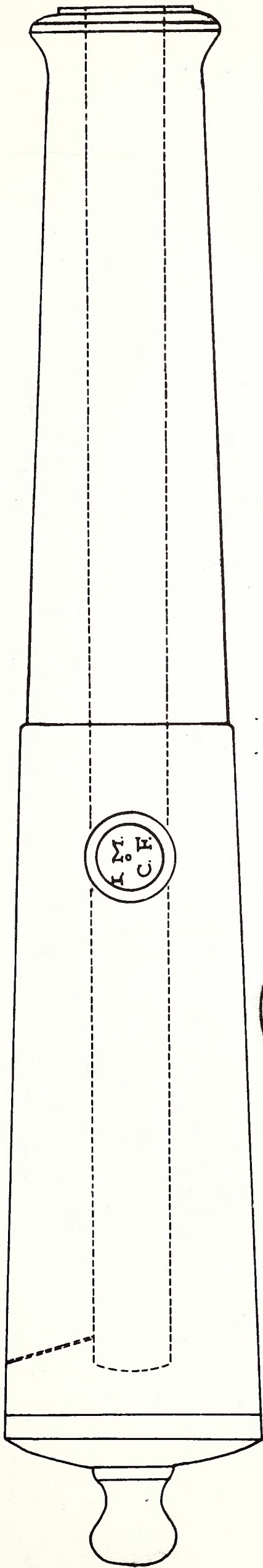
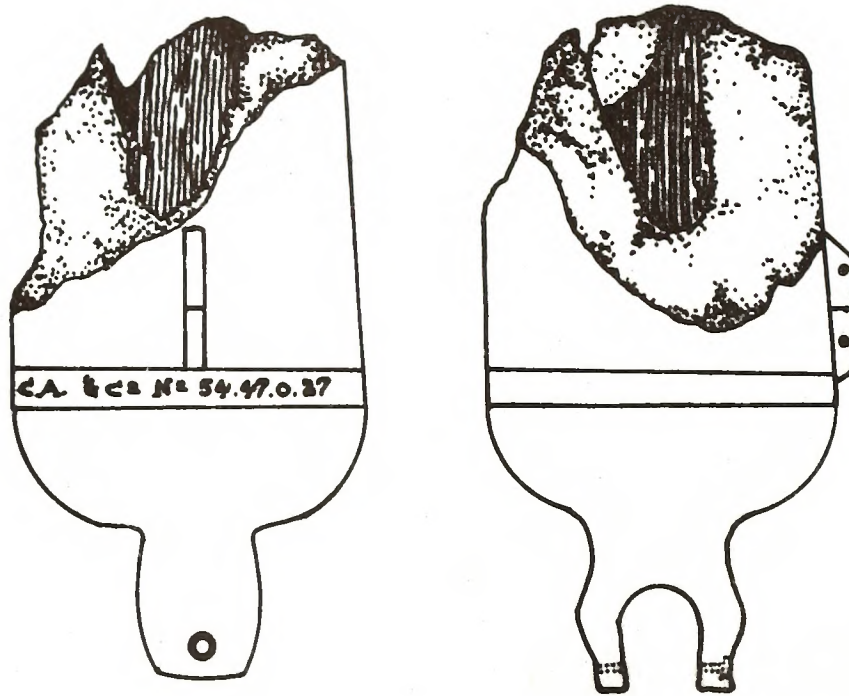


Figure 66 24-pounder smoothbore, No. 164
Scale: 1/12

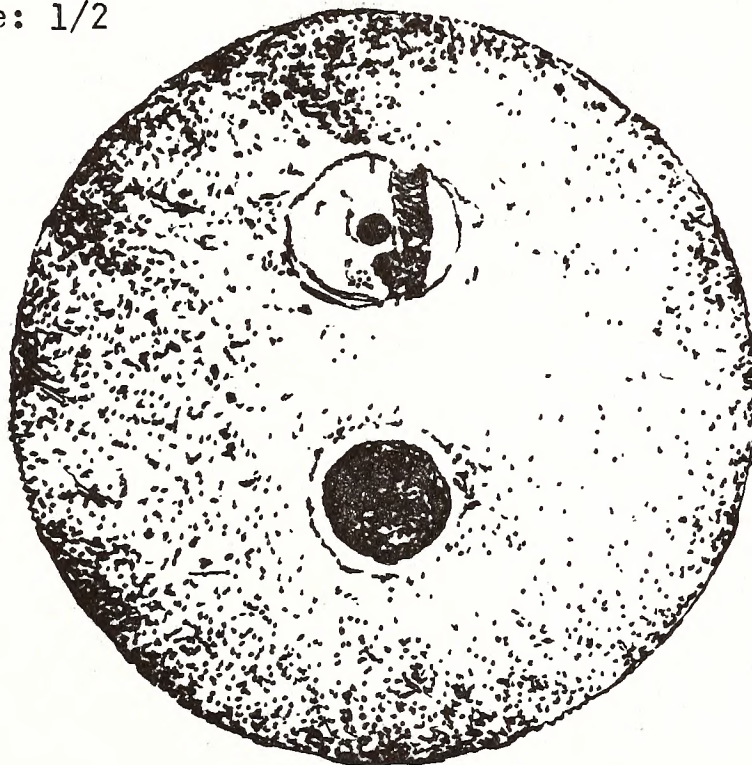
Figure 67 32-pounder smoothbore, breech fragment
Scale: 1/12



Ordnance

Artifact: Shot, case, 32-pounder
 NCDAAH: 0813
 Size: diameter (shot) 6 1/8 inches; diameter
 fuse 1 1/4 inches
 Description: Spherical cast-iron explosive shot with
 fuse and filler hole; contained filler shot
 Condition: Shell: good; fuse: surface damaged enough
 to eliminate any identification markings
 Figure 68 32-pounder case shot
 Scale: 1/2

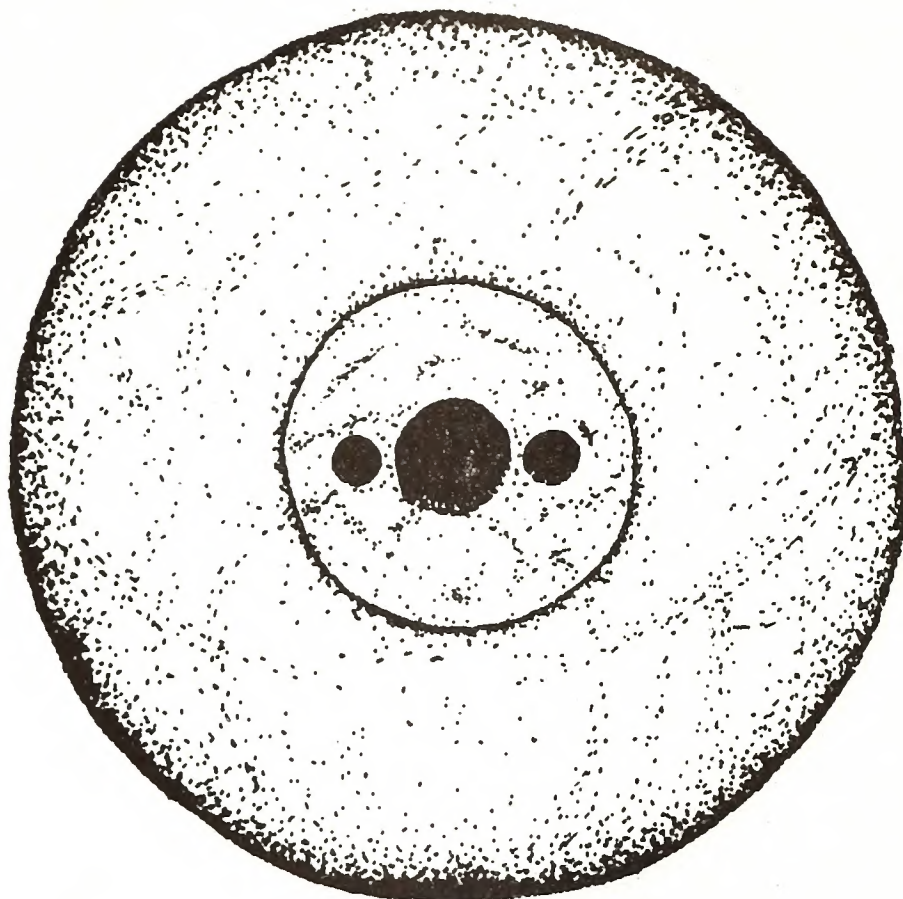
Top View



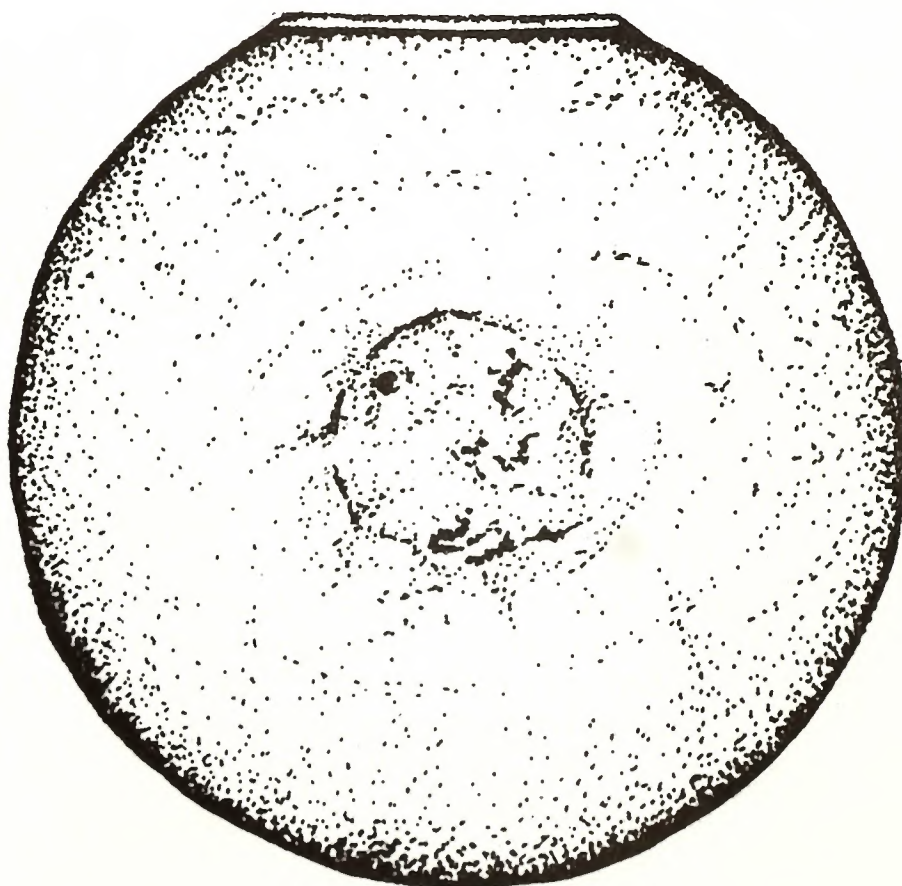
Artifact: Shot, case, 6-pounder, Confederate
 NCDAAH: 0101
 Size: diameter (shell) 3 5/8 inches; diameter
 (fuse) 1 7/16 inches
 Description: Spherical cast-iron explosive shot with
 copper fuse and lead filled shot hole;
 filled with shot; had oxidized remains of
 tin sabot straps visible when recovered
 that were lost in preservation
 Condition: good

Figure 69

6-pounder case shot
Scale: Full



Top view



Side view

Artifact: Projectile,
Blakely, 4 inch

Recovered: 3

NCDAH: 0164, 0301, 0958

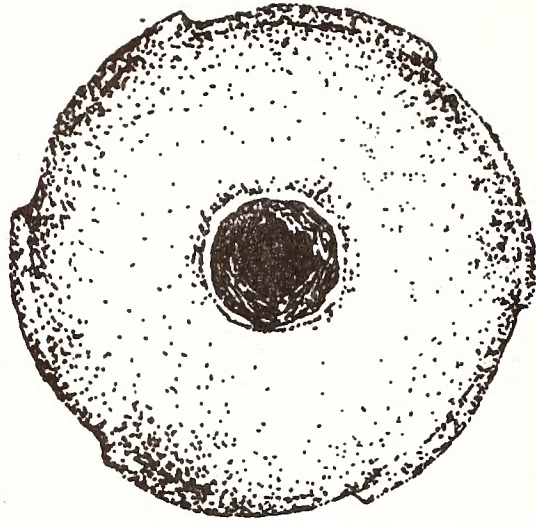
Size: diameter (across
flats) 4 inches;
diameter (across
flanges) 4 5/16;
length 8 3/16 inches

Description: a rifled projectile
with 6 ratchet
shaped flanges de-
signed to fit the
rifling of a
Blakely cannon

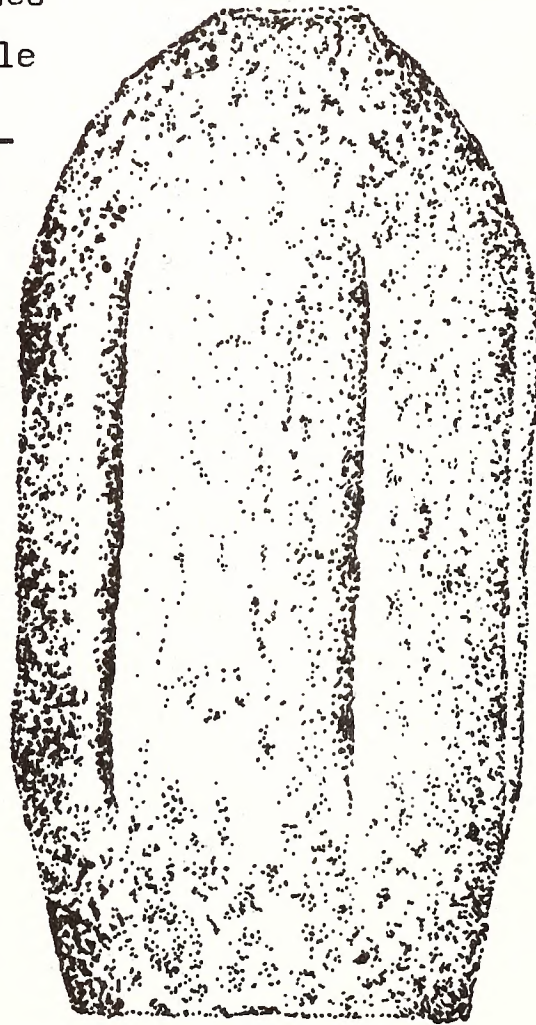
Condition: good

Remarks: Probably manu-
factured in
England and
shipped to the
Confederacy
through the
blockade

Figure 70 4 inch Blakely
projectile
Scale: 1/2



TOP VIEW



SIDE VIEW

Artifact: Stand of
grape, 24-
pounder

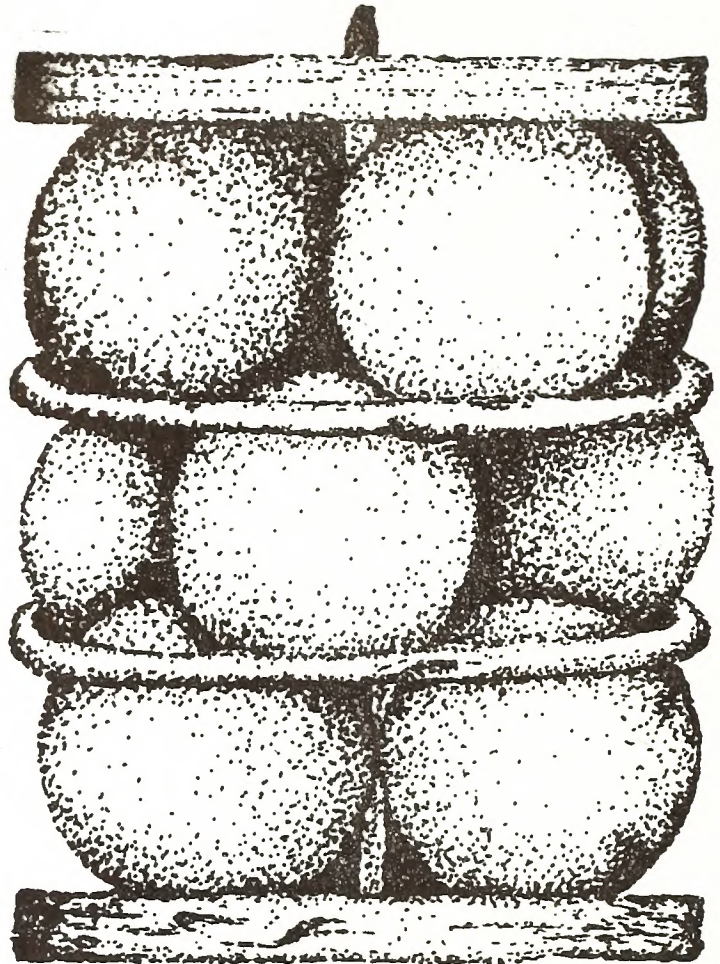
NCDAAH: 0069

Size: diameter
(overall)
5 5/8 inches
diameter
(shot) 2 1/2
inches;
length 7 3/4
inches

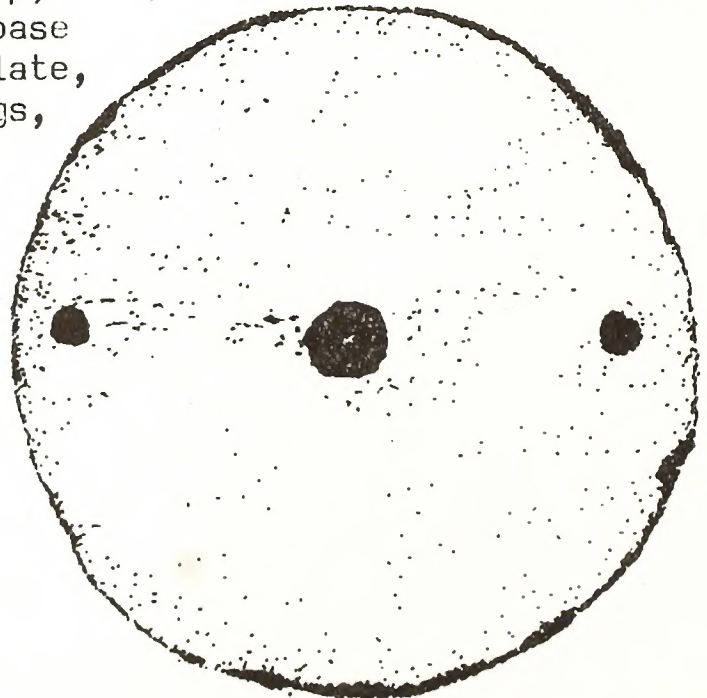
Description: assembled
stand of
grape, com-
plete except
for nut and
carrying strap;
consists of base
plate, top plate,
two iron rings,
connecting
bolt and
nine shot
in layers

Condition: excellent

Figure 71 Stand of
grape, 24-
pounder
Scale: 1/2



Side view



Top View

Artifact: Shot, canister

Recovered: 8

NCDAAH: 0049, 0060, 0088, 0104, 0112, 0115, 0329, 0966

Size: diameter 1 1/4 inches

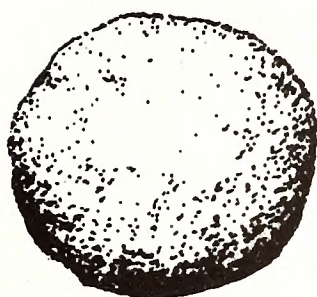
Markings: sprue and mold marks

Description: spherical solid cast-iron shot

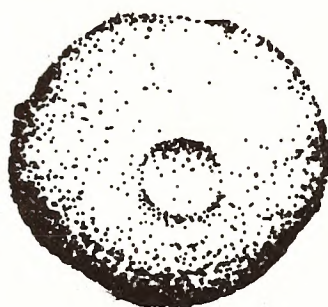
Condition: good

Figure 72 Canister shot

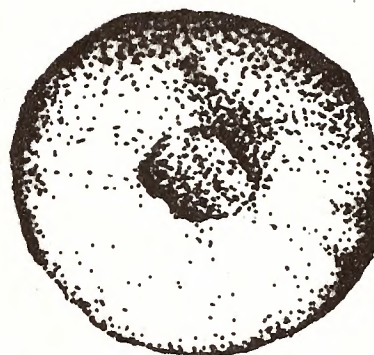
Scale: Full



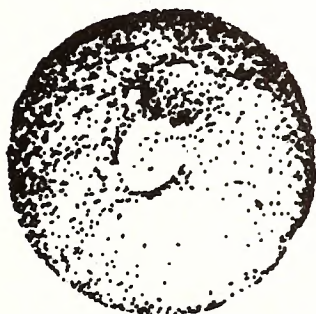
0049
Side View



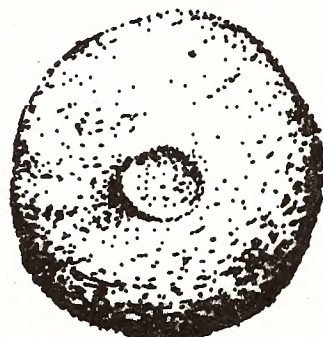
0060
Side View



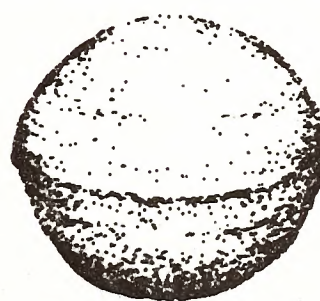
0088
Side View



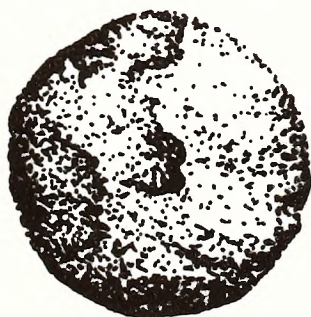
0104
Side View



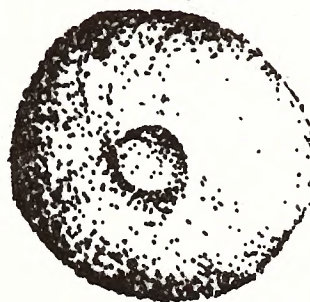
0112
Side View



0115
Side View



0329
Side View



0966
Side View

Artifact: Shot, filler

Recovered: 14

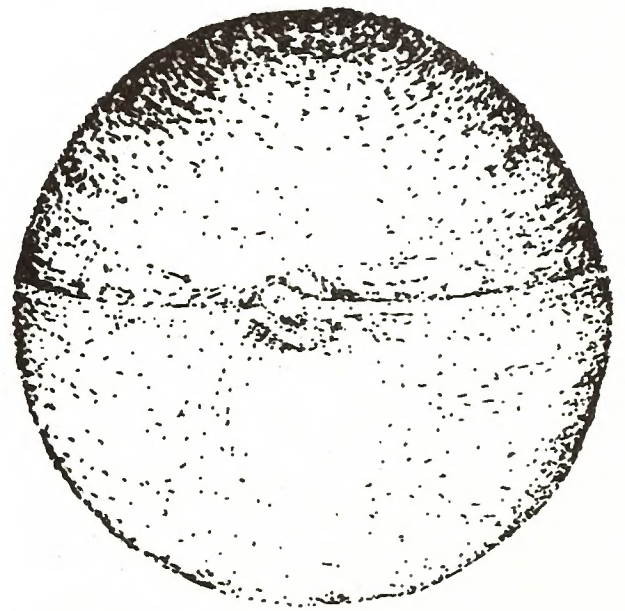
NCDAAH: 0038, 0056, 0057, 0064, 0066, 0070, 0071, 0119,
0234, 0176, 0812, 0962, 0967, 0976

Size: diameter 2 inches to 2 1/2 inches

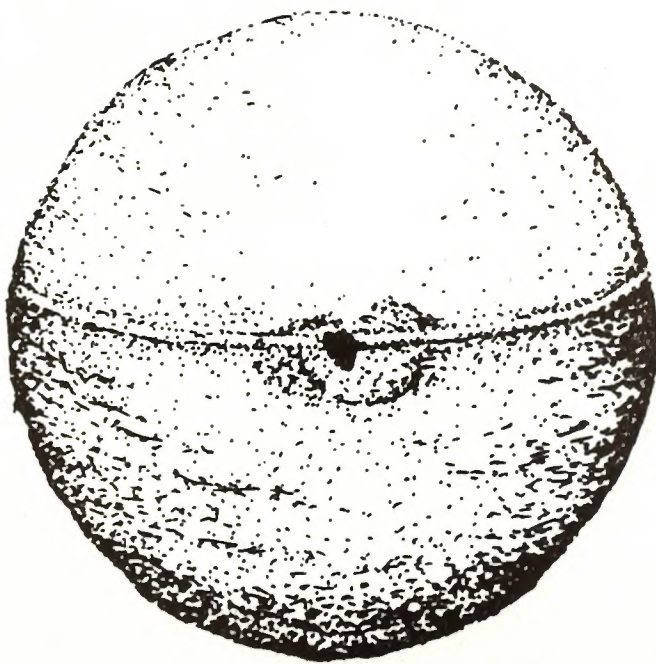
Description: spherical solid cast-iron shot, either used in
canister or grape shot for 24-pounder smooth-
bore; some shot exhibit mold marks and can be
assumed to be canister; those cast without
mold marks are probably grape shot

Condition: good

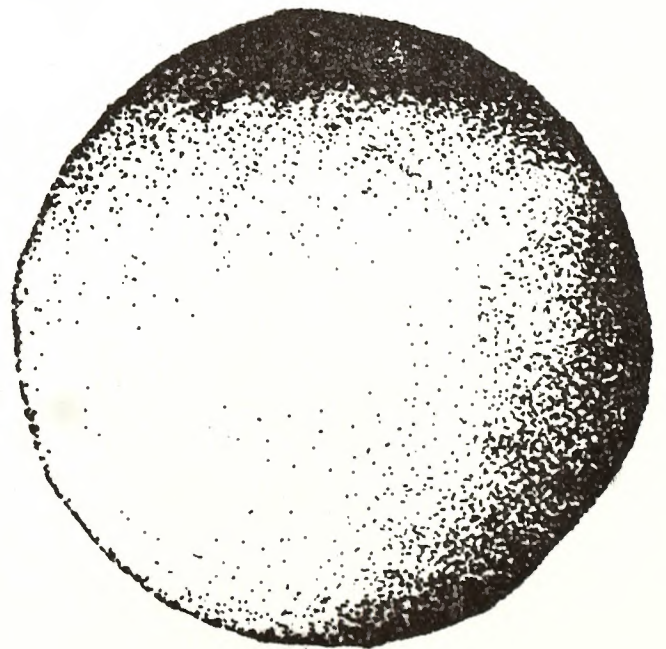
Figure 73 Fill shot
Scale: Full



0056
Perspective View



0064
Perspective View



0962
Perspective View

Artifact: Bullet, Enfield, .577 caliber
 NCDAAH: 0960
 Size: diameter .577 inches; length 1 1/8 inch
 Description: smooth-sided rifle bullet with conical identification in base for use in English made Enfield rifle
 Condition: good
 Remarks: found within the tube of the 24-pounder smooth-bore No. 164

Figure 74 Enfield bullet
 Scale: Full

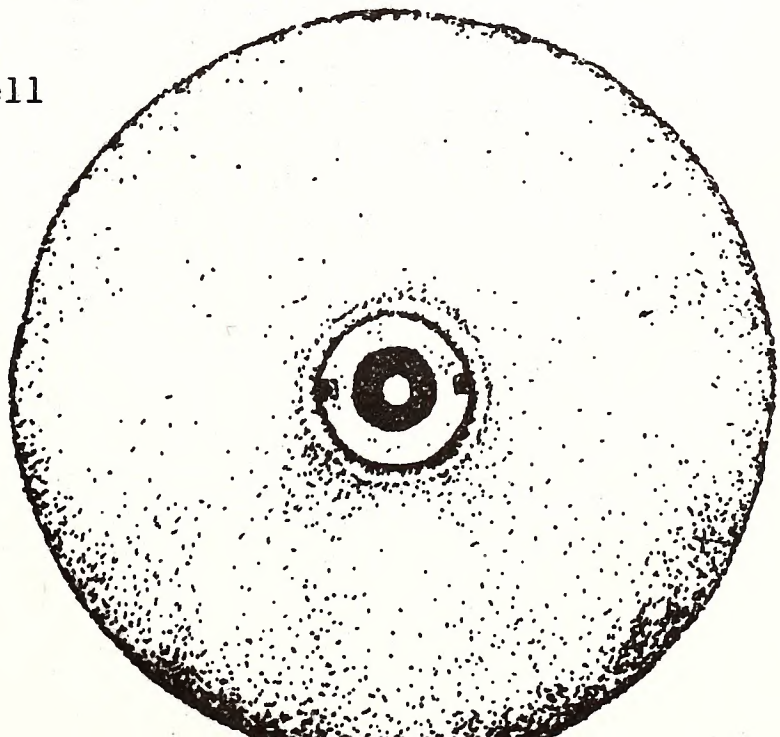


Side View



Bottom View

Artifact: Shell, spherical, 32-pounder
 NCDAAH: 0300
 Size: diameter (shell) 6 1/4 inches; diameter (fuse) 1 1/4 inches
 Markings: on fuse "1862," "ordnance D." and anchor symbol.
 Description: spherical cast-iron explosive shot with United States Model 1862 fuse
 Condition: good
 Figure 75 32-pounder shell
 Scale: 1/2



Top View

Artifact: Shot, solid
24-pounder

NCDAAH: 0110

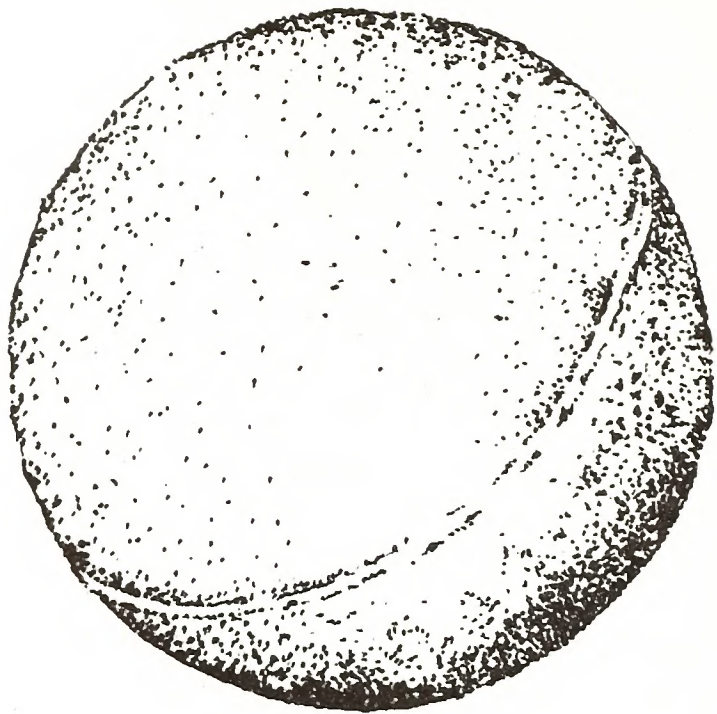
Size: diameter
5 7/16 inches

Markings: mold mark
around
circumference

Description: solid cast-
iron shot

Condition: good

Figure 76 24-pounder
solid shot
Scale: 1/2



Perspective View

Artifact: Shell frag-
ment

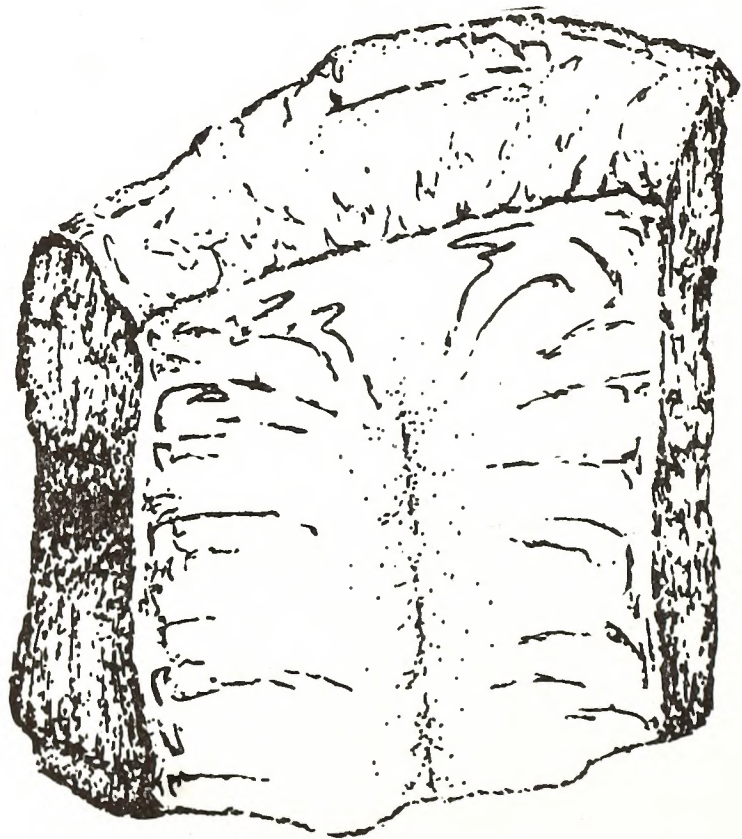
NCDAAH: 0024

Size: approxi-
mately 2
3/4 inches
x 3 inches
x 1 inch

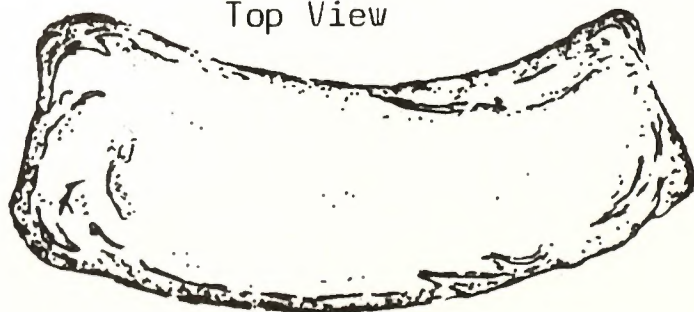
Description: section of
exploded
shell

Condition: good

Figure 77 shell frag-
ment
Scale: Full



Top View

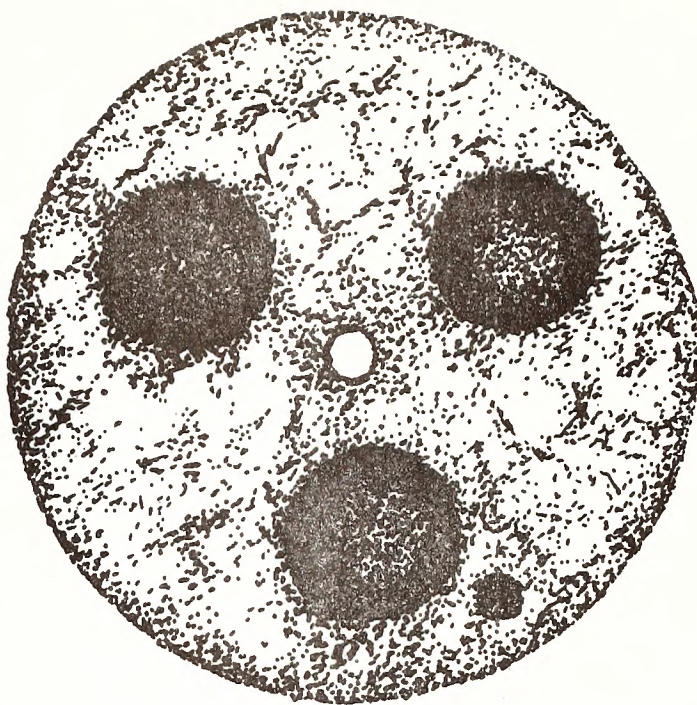


Side View

Artifact: Grape shot plate,
24-pounder

NCDAAH: 0083

Size: diameter (over-
all) 5 5/8
inches; dia-
meter (shot
depressions)
1 3/8 inches;
diameter (center
hole) 1/2 inch;
thickness 1/2 inch



Description: round cast-iron
base plate for 24-
pounder grape shot;
center hole for connecting
bolt and depressions for
the first layer of three
shot

Condition: good



Figure 78 Grape shot plate
Scale: 1/2

Artifact: Base plate,
canister, 24-
pounder

NCDAAH: 0233

Size: diameter 5 5/8
inches; thick-
ness 1/3 inch

Description: round cast-iron
plate

Condition: good; however, broken
into two pieces during
preservation

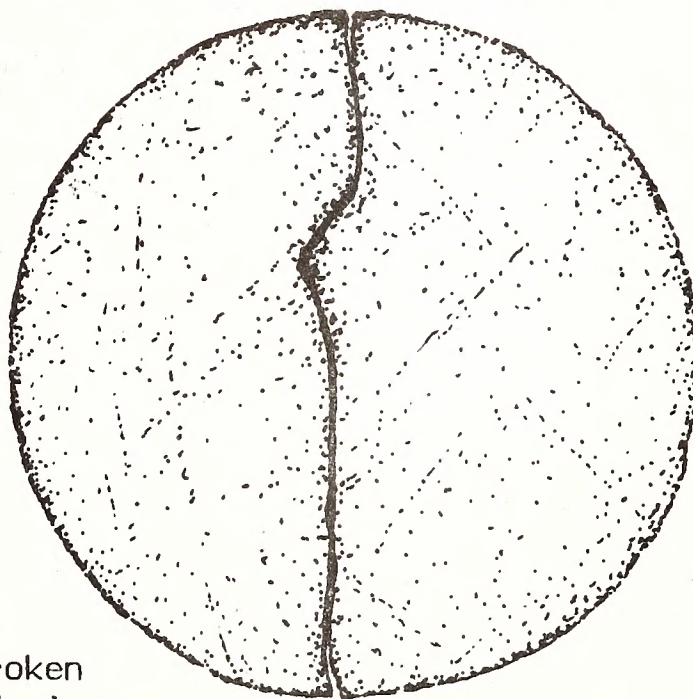


Figure 79 Canister base
plate
Scale: 1/2



Artifact: Fuse, Blakely, brass
 Recovered: 4 complete, 1 cap
 NCDAAH: Fuses 0041, 0061, 0062, 0208; cap 0209
 Size: Length (overall) 1 3/4 inches; length (cap) 1 1/16 inches; length (threads) 5/8 inches; diameter (cap) 1 3/16 inches; diameter (threads) 7/8 inch; threads per inch 16
 Description: brass percussion fuses for Blakely projectiles; consist of hemispherical cap with inside threads that mount onto the basic fuse which is in turn threaded into the point of a Blakely projectile
 Condition: excellent
 Figure 80 Blakely fuse
 Scale: Full



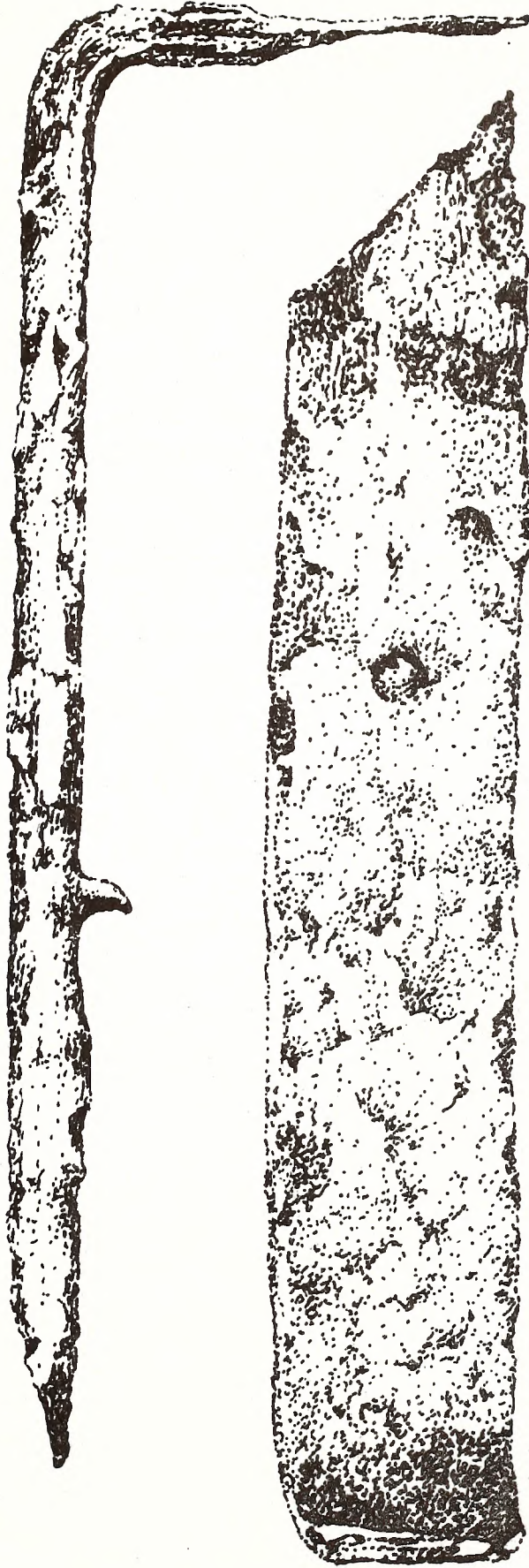
0041
Side View



0041
Bottom View



0209
Perspective View
of top piece,
inside

Carriage Parts Found Separately from Carriage

Artifact: Fragment of axle band, iron

NCDAB: 0000

Size: Length 5 inches; 90 degree angle at one end with 1 1/2 inch projection

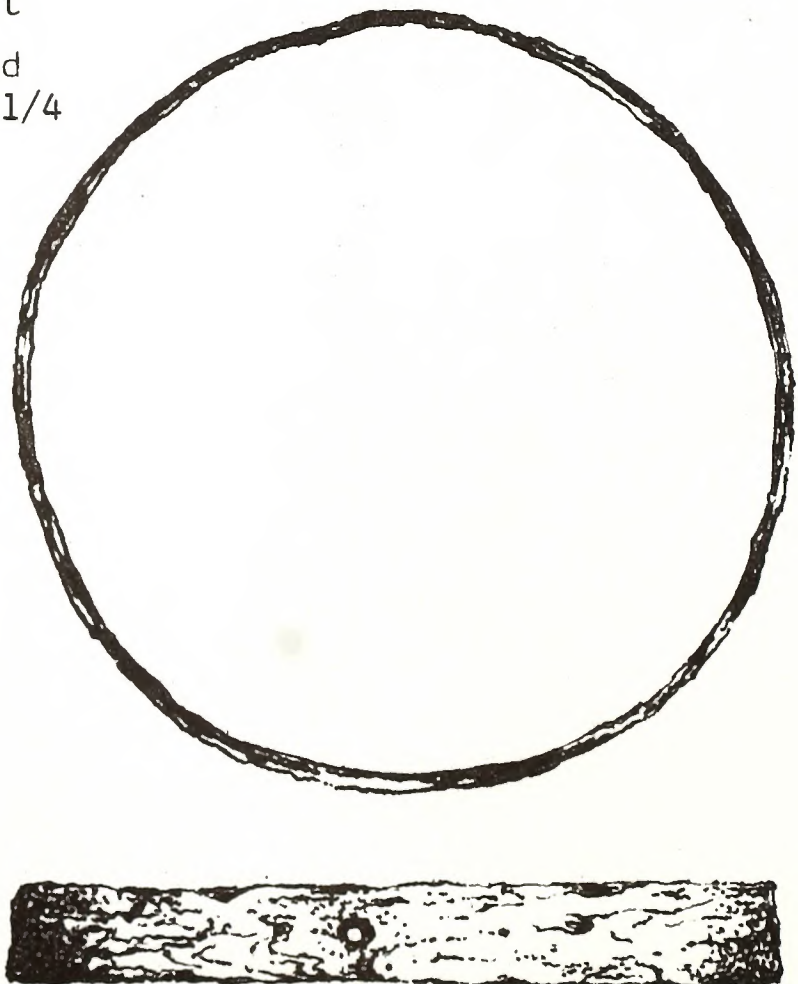
Description: fragment of strap that surrounds end of axletree bed; holds axletree in place

Condition: fair; pitted

Figure 81
Scale: Full

Artifact: Hub from carriage wheel
 NCDAAH: 0027
 Size: diameter approximately 10 inches; length 18 inches
 Description: 3 nave bands intact, also has iron nave boxing inside wood; may be from siege and garrison carriage with no hubs and single piece tail-piece
 Condition: fair; spokes were broken off of all wheels but one, and hubs were eroded by current, leaching, and mud and rust concretion

Artifact: Nave band, complete
 NCDAAH: 0206
 Size: diameter 13 inches
 Description: iron strap that surrounds and reinforces wooden hub (nave) from carriage wheel; all hubs had four such straps when manufactured
 Condition: excellent
 Figure 82 Nave band
 Scale: 1/4



Artifact: Circular iron plate

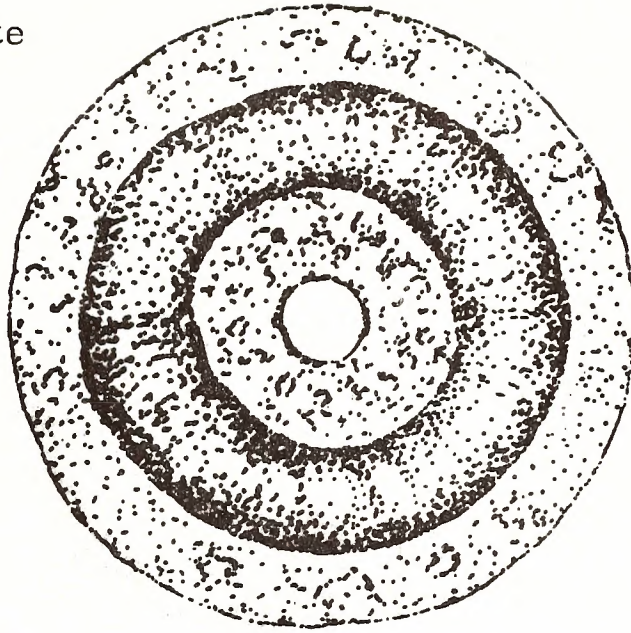
NCDAAH: 0009

Size: diameter 5 inches;
thickness $\frac{3}{4}$
inches; $\frac{1}{2}$ inch
hole in center;
possibly a ron-
celle from gun
carriage, but
small size of
hole makes this
uncertain

Condition: good

Figure 83 Circular iron plate

Scale: $\frac{1}{2}$



Artifact: Shoulder washer
from axletree,
iron

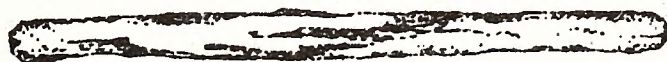
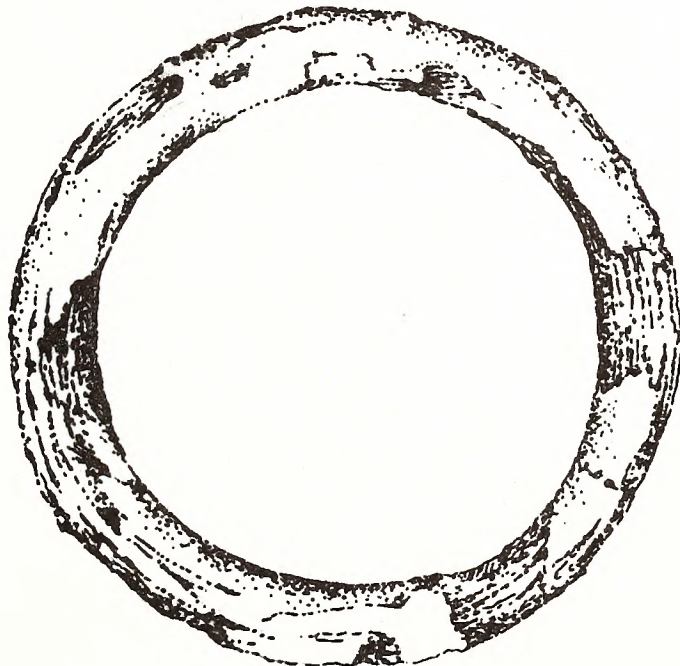
NCDAAH: 0014

Size: OD $5 \frac{1}{2}$ inches
ID 4 inches

Condition: good, some
pitting

Figure 84 Shoulder washer
from axletree

Scale: $\frac{1}{2}$



Artifact: Axleband, iron

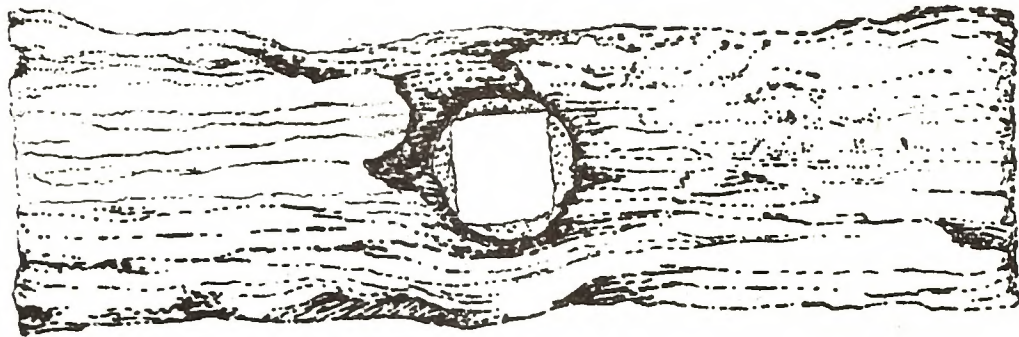
NCDAH: 0091

Size: 8 inches square; width 2 inches; thickness approximately 1/4 inch

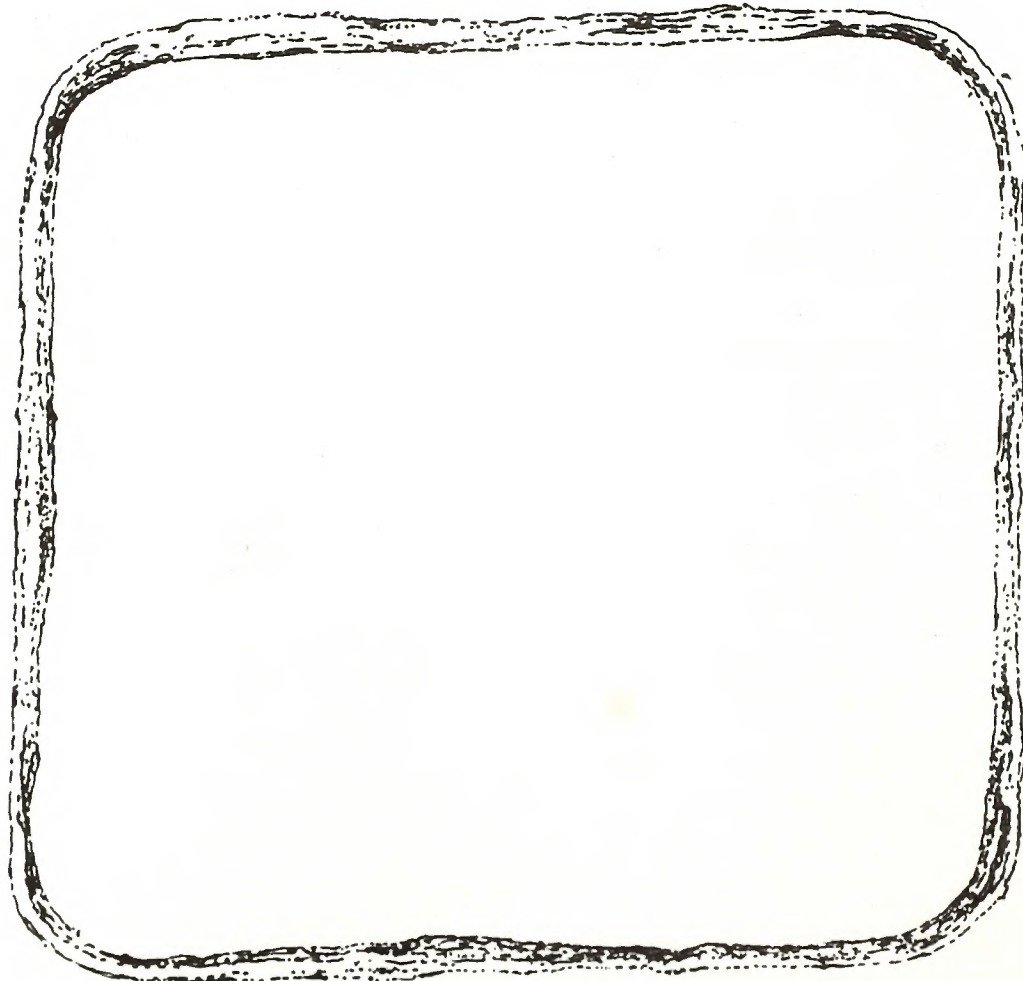
Description: designed to fit around axletree bed and axletree; holds axletree in place; has 1 inch hole on one side; 1 inch square on opposite side

Condition: good

Figure 85 Axle band
Scale: 1/2



Top View



Side View

Artifact: Large pointing ring from field carriage, iron

NCDAAH: 0093

Size: ring OD 3 1/2 inches; shaft diameter 1 inch;
overall length 6 1/2 inches

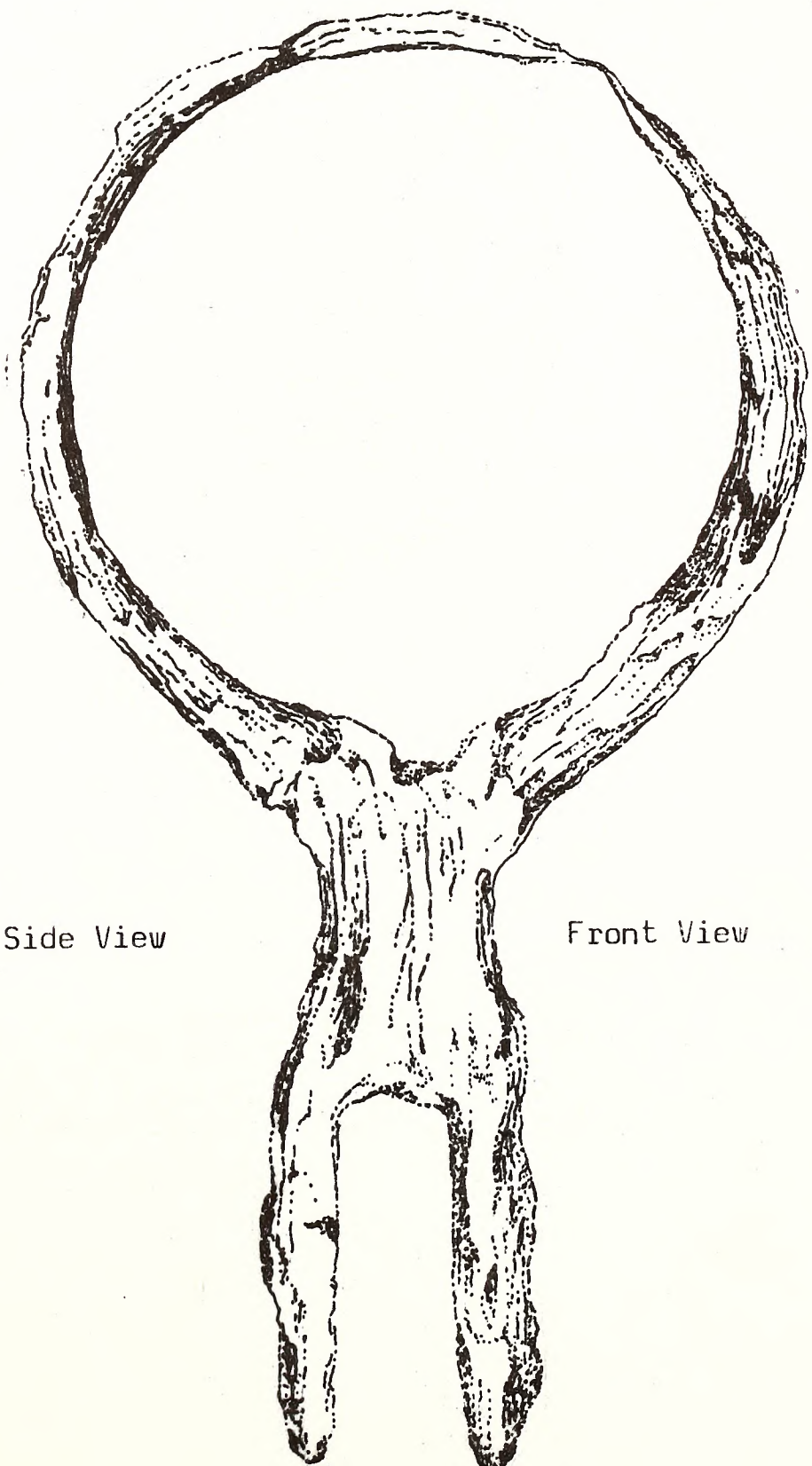
Description: bottom of shaft split in two pieces; each side
had 1/2 inch hole for mounting to carriage
trail stock

Remarks: This ring was fitted on the top of the rear part
of the trail stock of a 6 pounder field carriage.
A long pole or hand spike would be thrust through
the ring to lift and turn the carriage when
necessary

Condition: good Figure 86 - Pointing ring, Scale: Full



Side View



Front View

Artifact: Nave band, iron

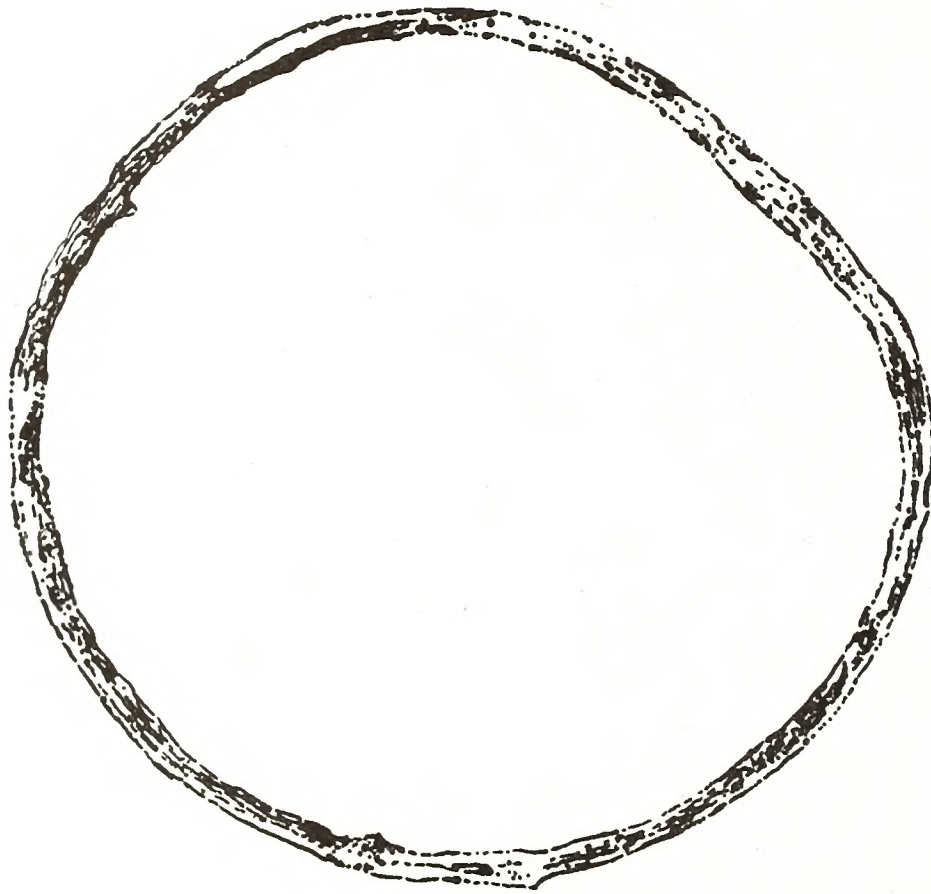
NCDAAH: 0169

Size: diameter 9 inches

Description: secured wood on hub from carriage wheel

Condition: good; bent on one side

Figure 87 Nave band
Scale: 1/3

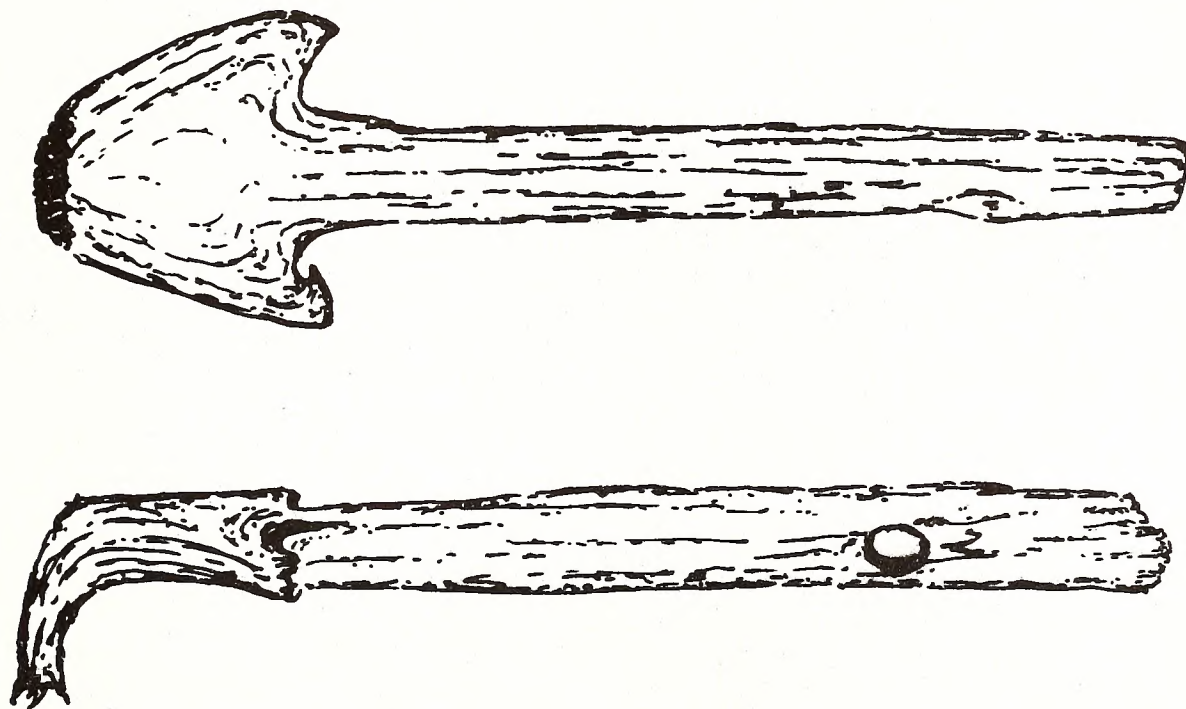


SIDE VIEW

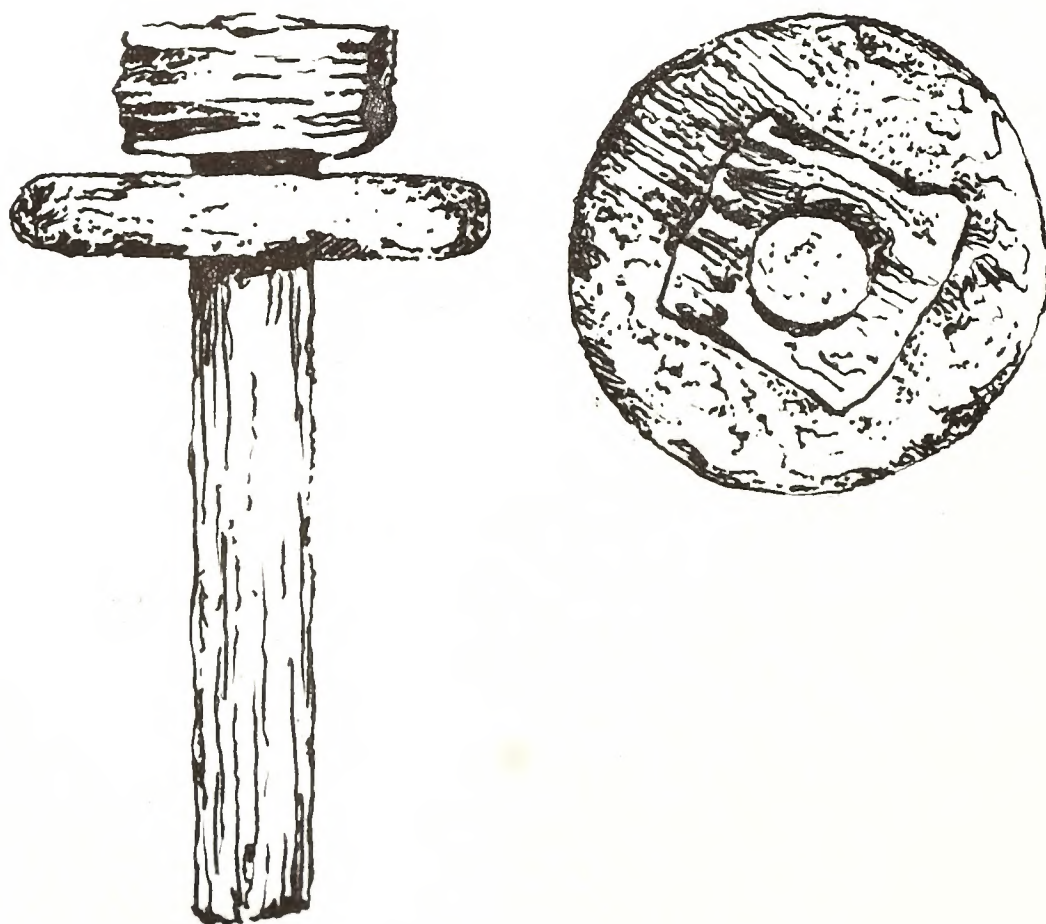


TOP VIEW

Artifact: Linch pin from axletree, iron
NCDAAH: 0036
Size: shaft diameter 3/8 inches; length 4 1/2 inches
Description: hole in one end for cotter pin; this pin fits
in hole in end of axletree to prevent hub from
sliding
Condition: good; some pitting
Figure 88 Linch pin
Scale: Full



Artifact: Iron bar with nut and disc attached
NCDAAH: 0129
Size: bar 7 1/4 inch x 1 inch square; nut 2 inches square, 1 inch diameter hole; disc 3 3/4 inch diameter, 1 inch square hole
Description: bar is threaded on nut end, broken off on other end; disc fits on square bar; nut is threaded, but frozen in place
Association: fragment of trail stock from siege and garrison carriage; probably is one half of the lifting attachment on trail stock fragment #0035, presently on display with the siege and garrison carriage that mounted the 24-pounder smoothbore No. 164.
Condition: fair
Figure 89 Iron bar with nut and disc attached
Scale: 1/2



Artifact: Trail stock fragment

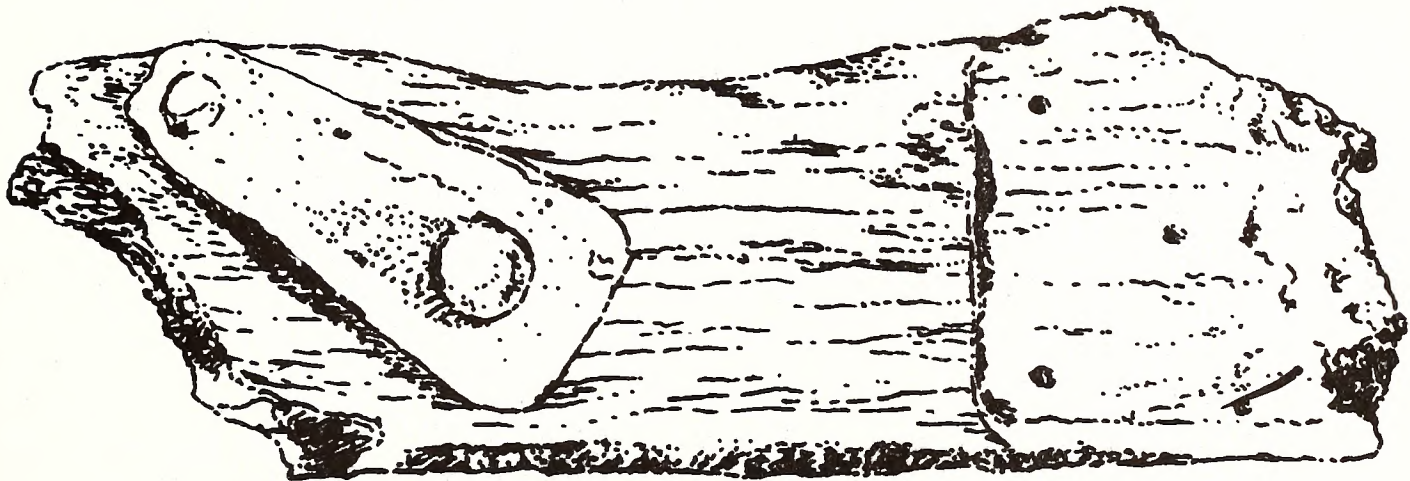
NCDAAH: 0173

Size: length 16 inches; width 5 inches; thickness
2 1/2 inches

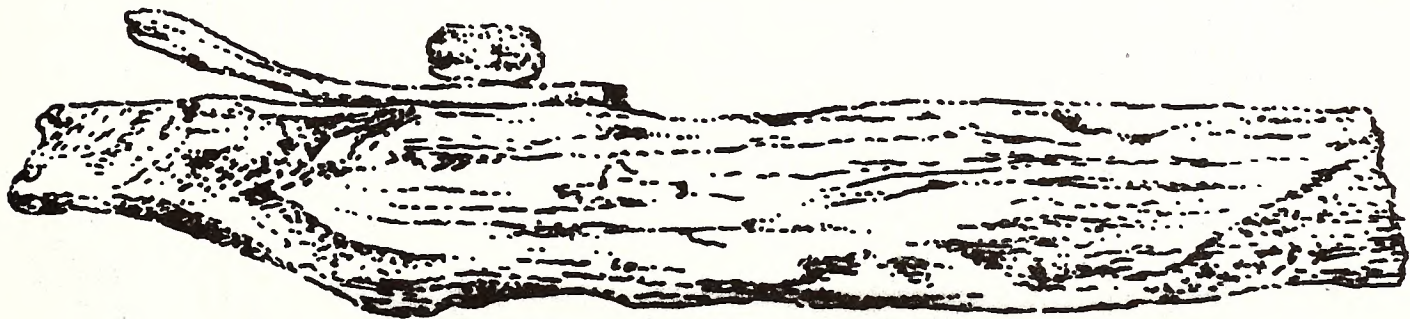
Description: Wood shows imprint of iron plate similar to that found on 6-pounder field carriage trail stock. Bracket dimensions also match dimensions of bracket on field carriage. This piece is undoubtedly a fragment of the missing 36-inch pieces from the two field carriages

Condition: good

Figure 90 Trail stock fragment
Scale: 1/3



Side View



Top View

Artifact: Fragment of axle band, iron

NCDAAH: 0175

Size: length 5 inches; 90-degree angle; 3 inch projection

Description: fragment of square that surrounds axletree bed and axletree; secures axletree

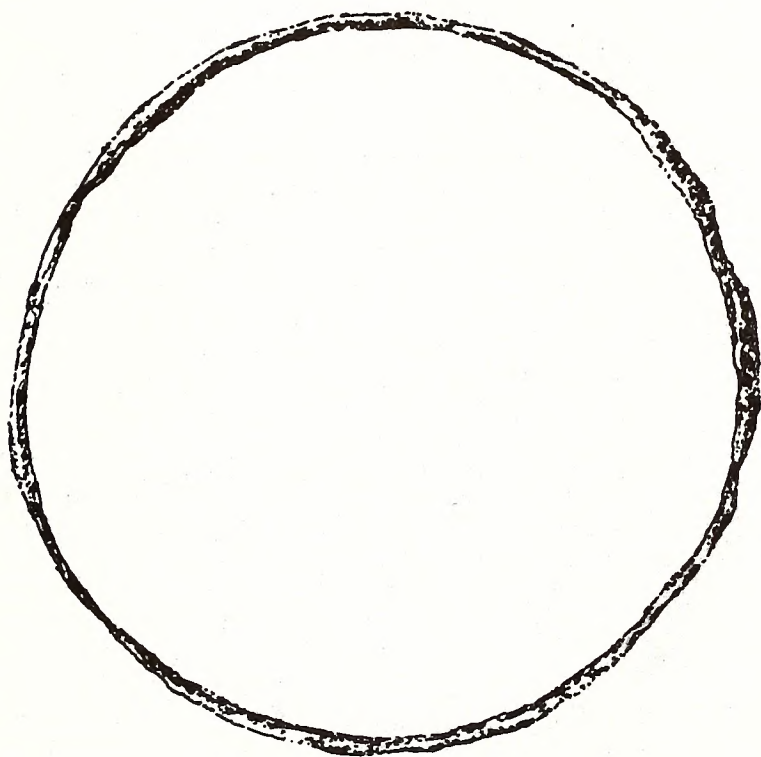
Condition: good; some pitting

Figure 91 Fragment of axle band

Scale: Full



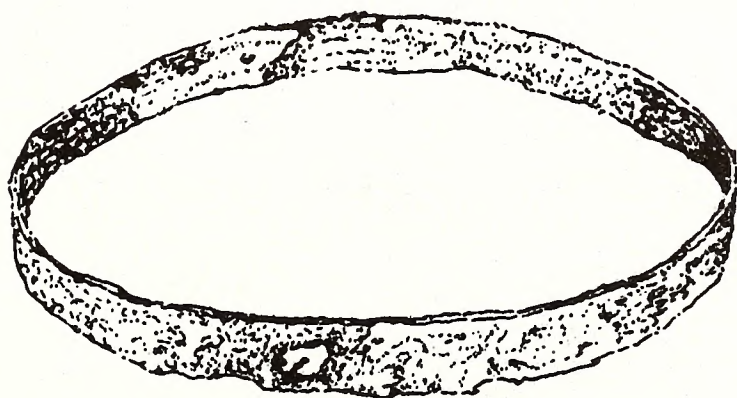
Artifact: Nave band, iron
NCDAAH: 0204
Size: diameter 14 inches
Condition: good; some of the edges have corroded away
Figure 92 Nave band
Scale: 1/4



Side View



Front View



Perspective View

Artifact: Lunette from field carriage trail stock, for attachment to limber, iron

NCDAAH: 0181

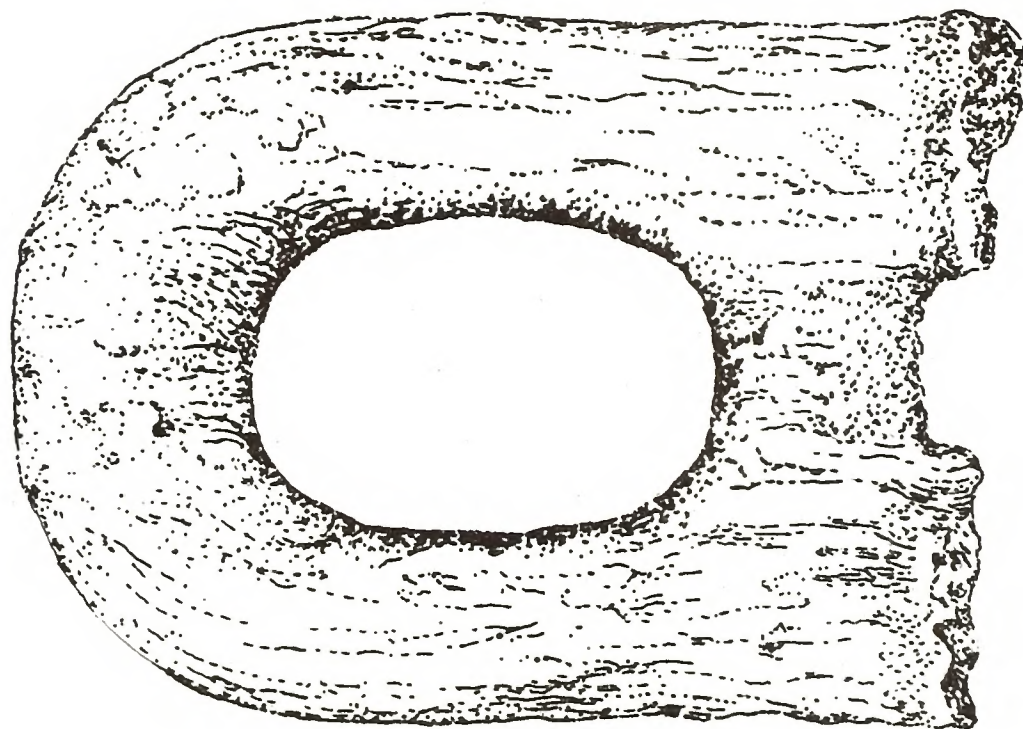
Size: 7 inches x 4 inches; hole 2 1/2 inches x 3 1/2 inches

Description: broken off trail plate; rounded contour

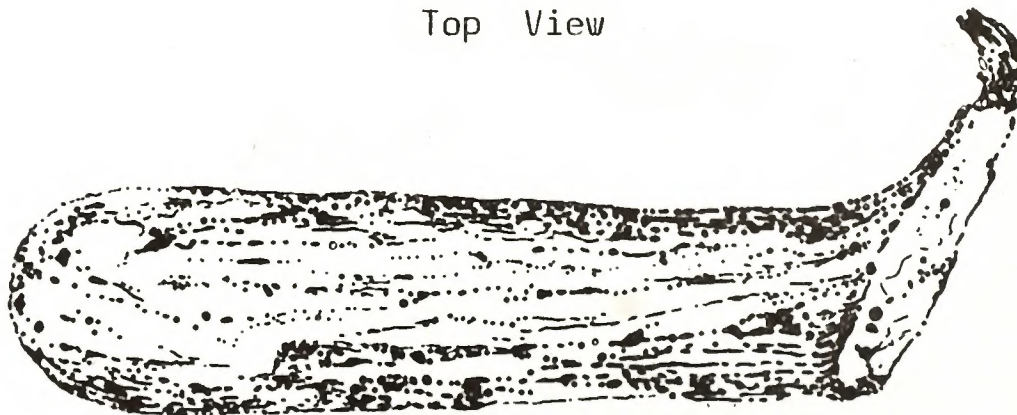
Condition: fair

Figure 93 Lunette

Scale: 1/2



Top View



Side View

Artifact: Bracket with hook, iron

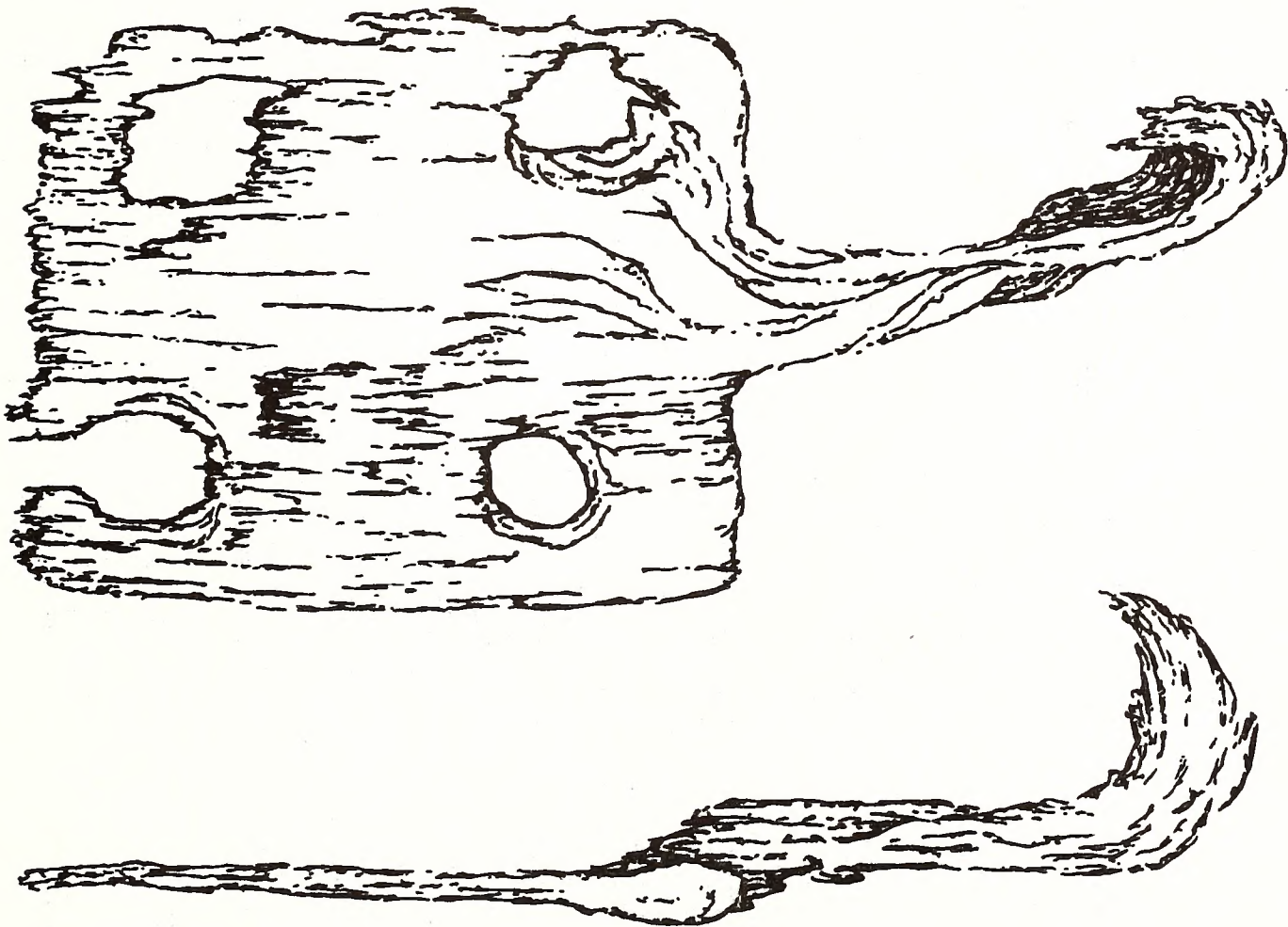
NCDAH: 0207

Size: 6 1/2 inches x 3 1/2 inches

Description: has 4 holes for screws; was attached to trail stock of gun carriage and used for securing rope

Condition: fair; hook badly corroded

Figure 94 Bracket with hook



Artifact: Nave band, iron
NCDAAH: 0972
Size: diameter 15 inches
Condition: good; bent in one place
Figure 95 Nave band
Scale: 1/4



Side View



Top View

Artifact: Linch washer, iron

NCDAAH: 0977

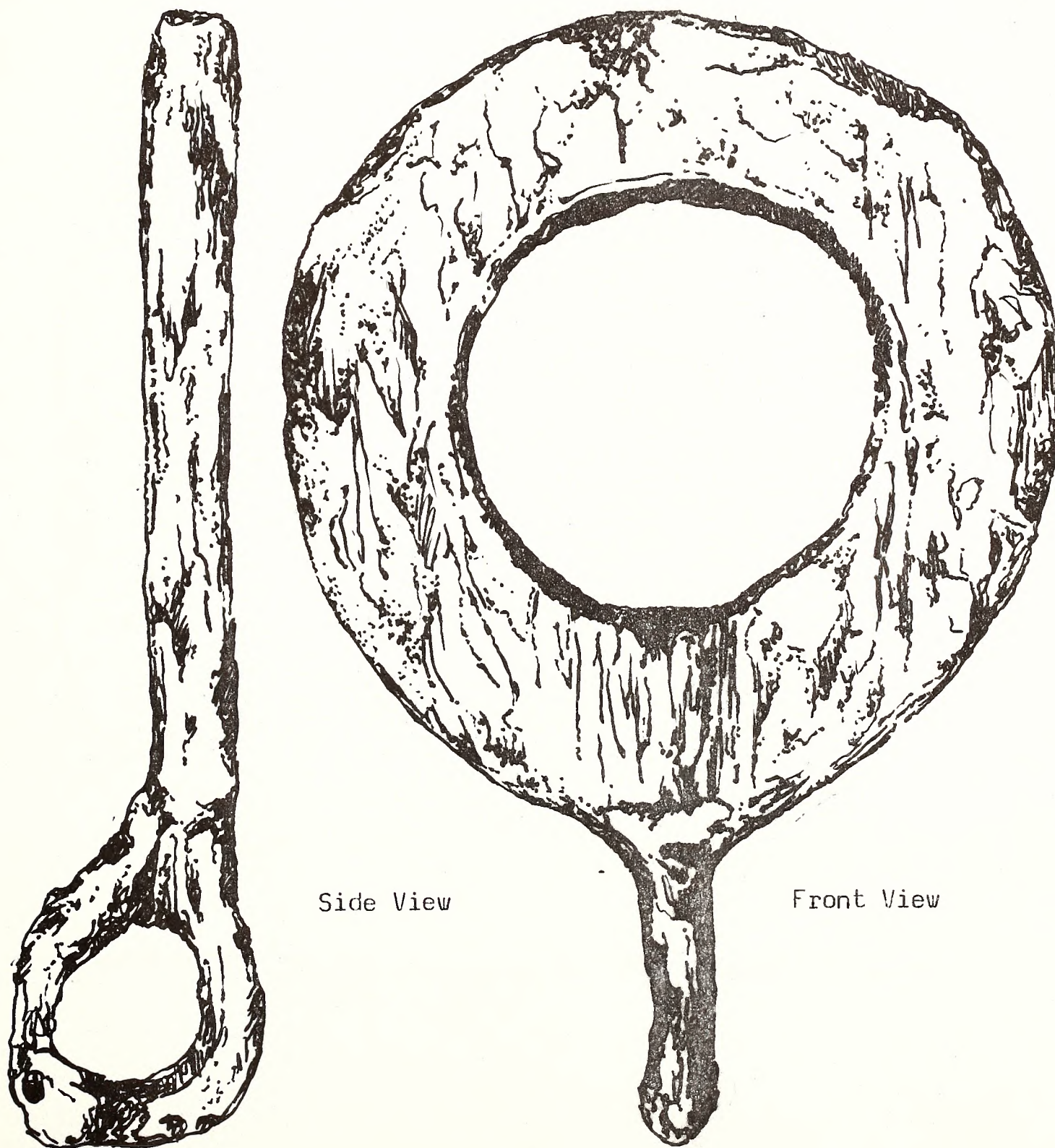
Size: OD 4 3/8 inches; ID 2 3/8 inches

Description: has 1 7/8 inch diameter ring projecting from bottom; fitted on the outside of hub on axle-tree of carriage

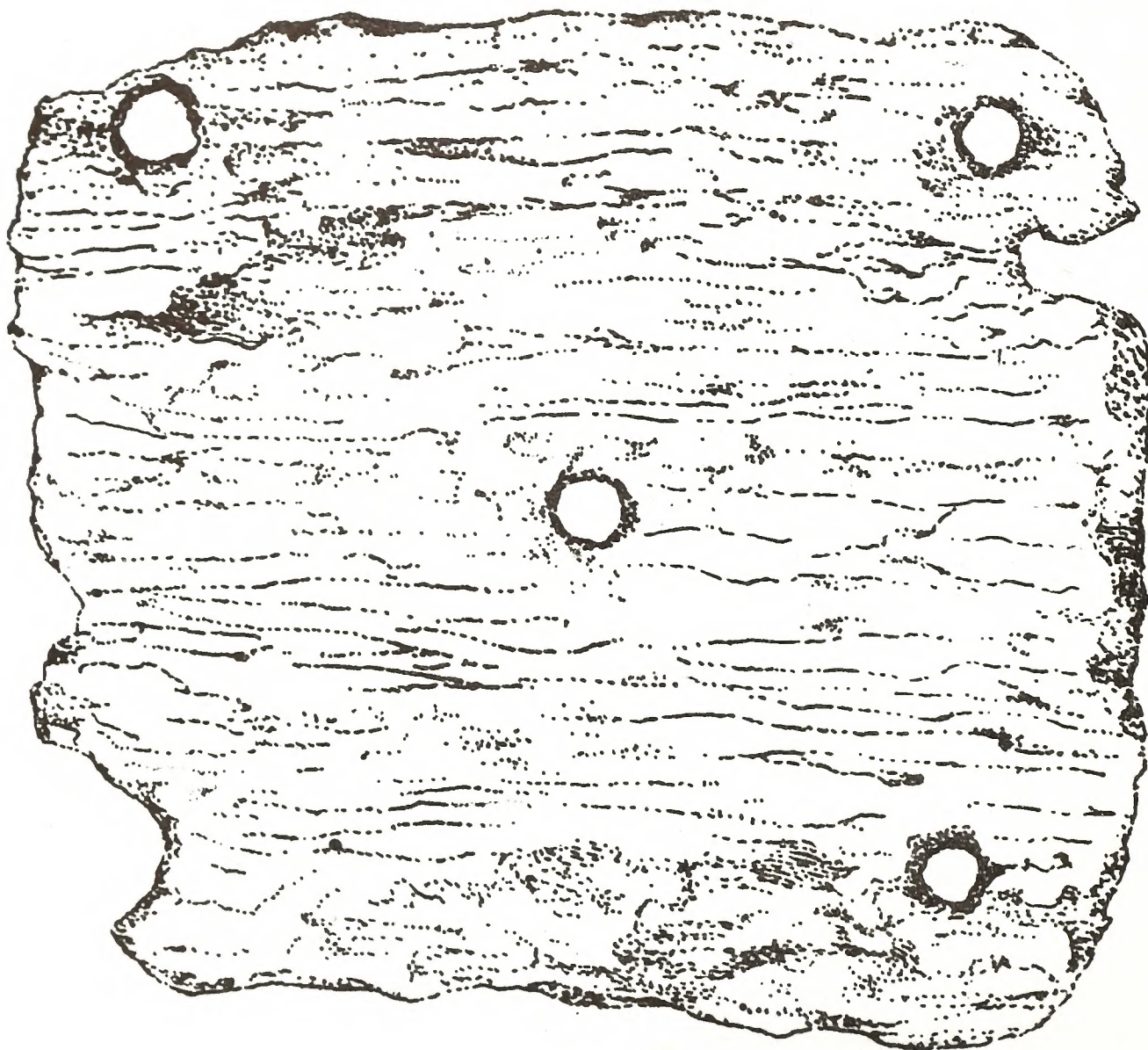
Condition: good

Figure 96 Linch washer

Scale: Full



Artifact: Wheel guard plate from field carriage, iron
NCDAAH: 0979
Size: 5 1/8 inches x 4 1/2 inches x 1/8 inch
Description: one corner missing; has holes in 3 corners and
1 in middle for screws
Condition: fair
Figure 97 Wheel guard plate
Scale: Full



Artifact: Wheel chock, iron

Recovered: 2

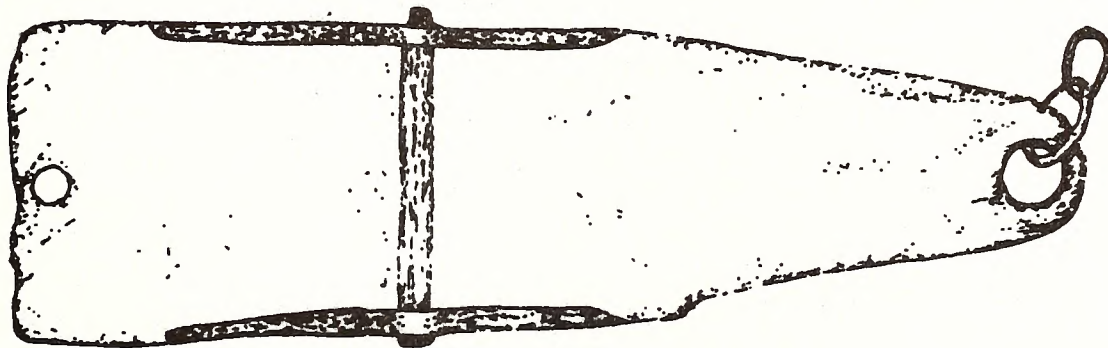
NCDAAH: 0026, 0130

Size: curved bottom; length 17 inches; width 5 inches;
sides 8 inches high

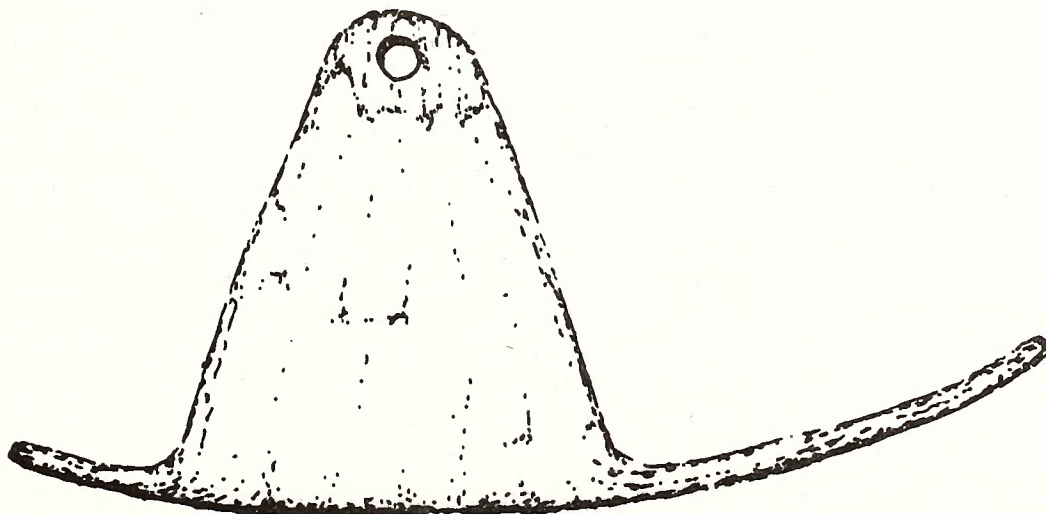
Description: 0026 has two chain links attached, 0130 has no chain attached. Both have holes on both ends of bottom and one on the top of each side through which a 6 inch pin is fitted. Right wheel of carriage was driven onto chock, then the pin was inserted between two spokes to hold carriage wheel stationary in the field

Condition: both fair

Figure 98 Wheel chock
Scale: 1/4



0026
Top View



0130
Side View

Artifact: Carriage Wheels

Recovered: 8

NCDAAH: 0137, 0161, 0162, 0163, 0165, 0184, 0186, 0475

Size:	<u>tire diameter</u>	<u>tire width</u>
0165	57 inches	2 1/4 inches
0162	57 inches	2 1/4 inches
0163	58 inches	3 1/2 inches
0184	58 inches	3 1/2 inches
0186	59 inches	3 1/2 inches
0137	59 inches	3 1/2 inches
0161	61 inches	3 1/2 inches
0475	55 1/4 inches	2 1/4 inches

Description: No spokes recovered. All wheels have a 3 1/2 inch or 1 1/4 inch wide iron tire made in one piece that was placed around the felloes (wooden pieces attached to spokes that formed the rim of the wheel) when it was hot. When the metal cooled, it shrank to fit the felloes securely. Also, bolt holes were drilled through the felloes and tire bolts inserted with the threaded end on the wooden side. Nuts were attached to secure the felloes even more snugly to the tire. All wheels recovered have all seven felloes intact, except #0475, which has four intact. Each fellow originally had two spokes attached, making a total of 14 spokes to a wheel. One tire bolt was driven through each fellow, making a total of seven tire bolts to a wheel. The felloes of the recovered wheels, while intact, display various states of decay with thickness ranging from 3 inches to 1/2 inch in some places. Most tire bolts are also intact, but some are severely corroded. The tires are all in good condition but exhibit a large amount of surface rust.

Condition: tires good; felloes fair

Artifact: Streaks from wheels or iron English gun carriage

Recovered: 12

NCDAAH: 0002, 0017, 0018, 0019, 0020, 0025, 0029, 0030, 0032, 0044, 0981, 0982

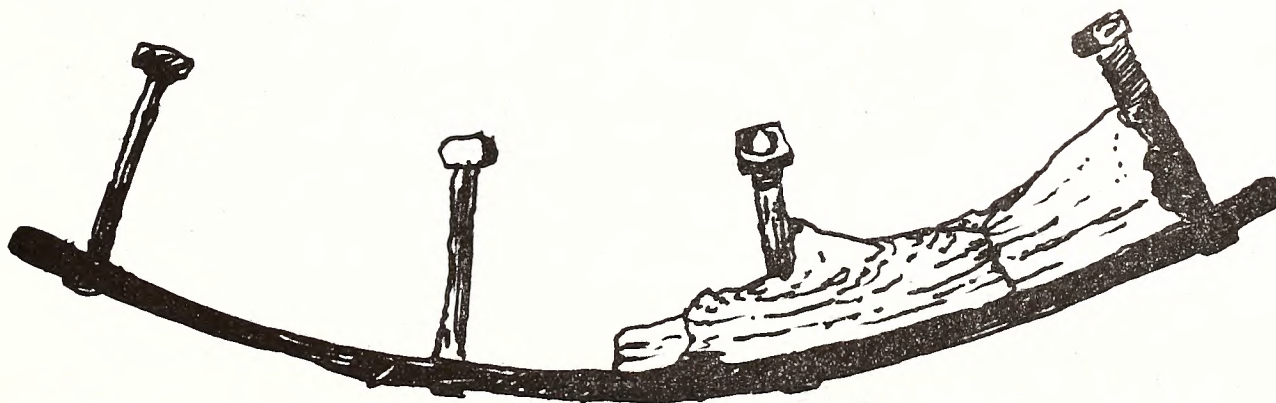
Size: length 24 inches; width 2 1/2 inches

Description: Streaks are the curved iron pieces that formed the tire or metal rim of English carriage wheels. The English made their tires in parts instead of in one piece because they felt they were easier to repair in the field. The tires from the iron carriage recovered at Fort Branch were composed of six streaks, each with a length of 24 inches and a width of 2 1/2 inches. The circumference of these wheels was 12 feet and the diameter was 3 feet, 10 inches. Each streak had four bolts with which the felloes of the wheel were secured. Each wheel had six felloes and 24 bolts. Although all 12 streaks from the English carriage were recovered and are presently in excellent condition, the felloes were in poor condition on all of the streaks, and most of the nuts on the felloe side of the securing bolts were completely oxidized. However, almost all of the bolts are intact and the existing wood was preserved with excellent results.

Figure 99 Streaks Scale: 1/4



0002
Top View



0002
Side View

Figure 100 Streaks

Scale: 1/4



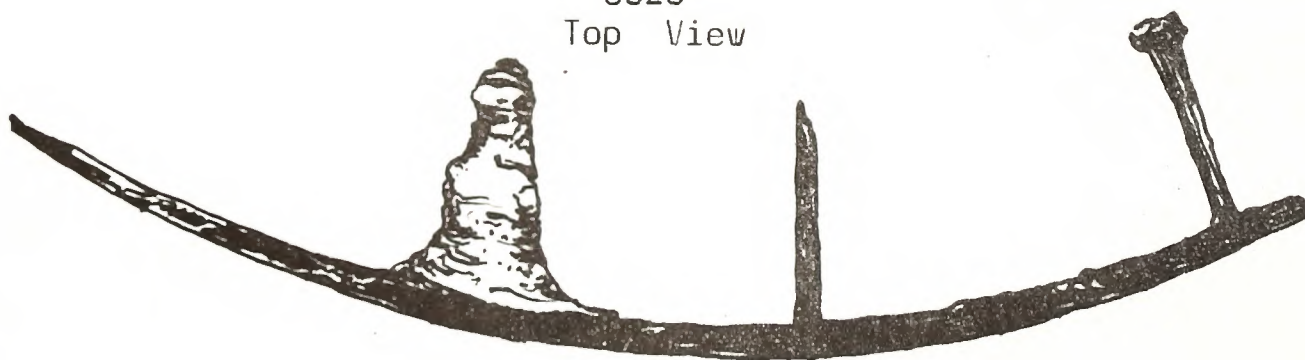
0019
Top View



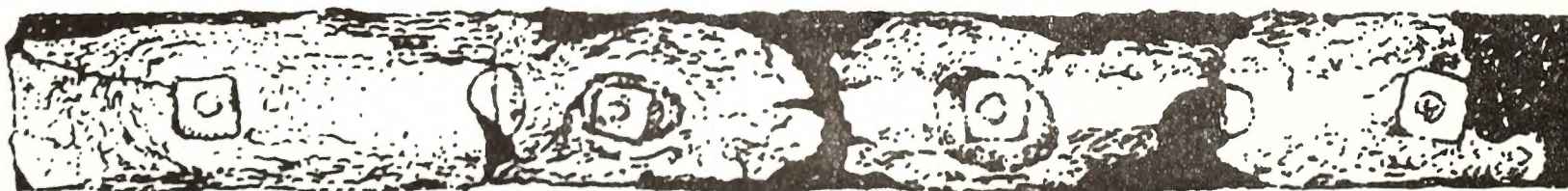
0019
Side View



0020
Top View



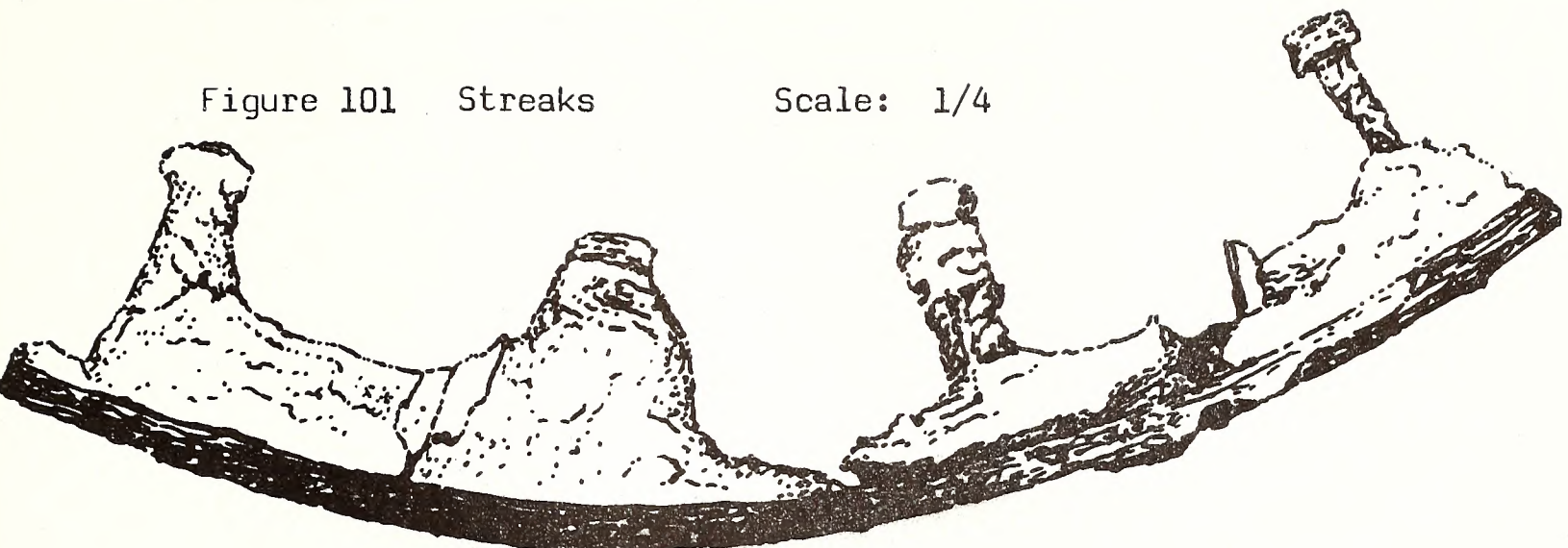
0020
Side View



0025
Top View

Figure 101 Streaks

Scale: 1/4



0025
Side View



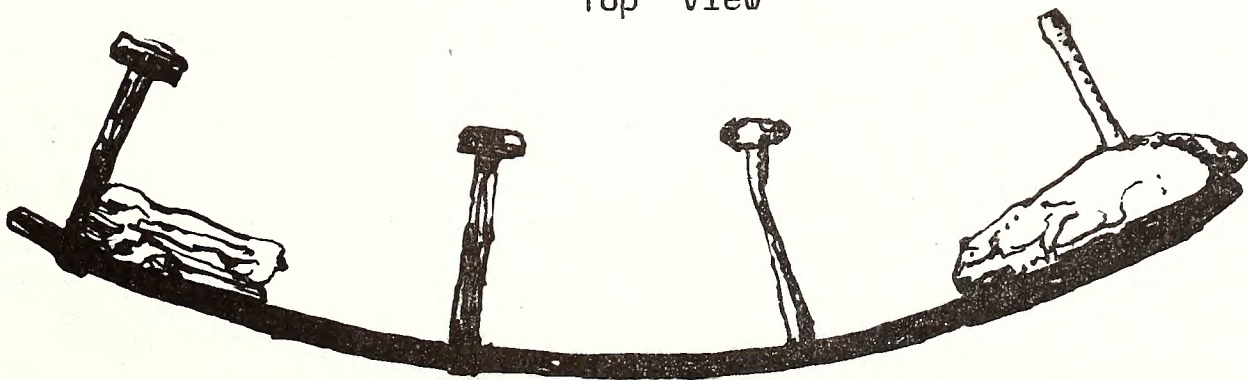
0029
Top View



0029
Side View



0030
Top View



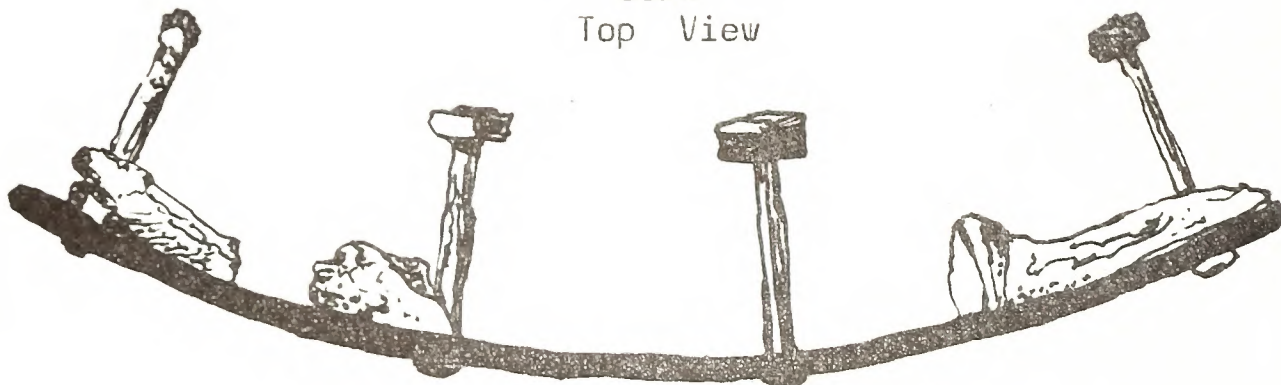
0030
Side View

Figure 102 Streaks

Scale: 1/4



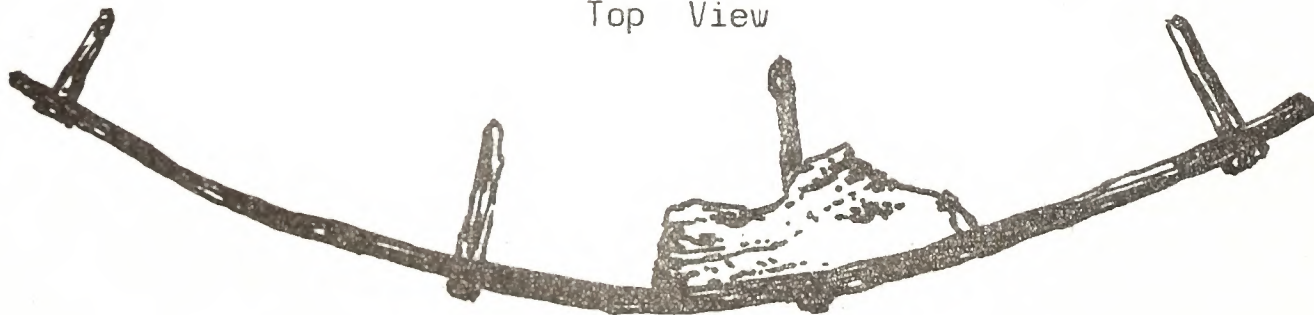
0032
Top View



0032
Side View



0981
Top View



0981
Side View



0982
Top View



0982
Side View

Artifact: Breechsight (brass)

Recovered: 2

NCDAAH: 0123, 0125

Size: length (overall) 10 7/8 inches; shank 5/8 inch x 5/8 inch

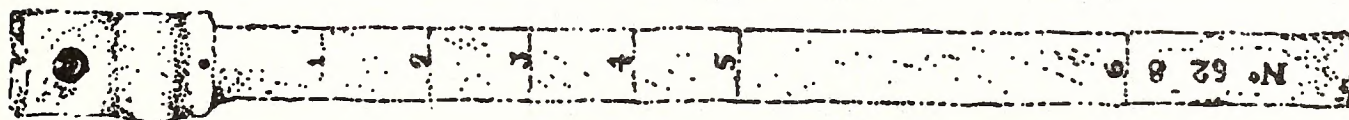
Markings: Graduations 0 1 2 3 4 5 6 appear from top to bottom one one side, each just above elevation lines. Below the graduation marks the identification No. 628 appears on the straight breechsight and No. 741 on the bent breechsight

Description: These two brass pieces are adjustable sights that would fit in mounting brackets attached to the breech of a cannon. The sights could be moved up and down in the brackets and could be secured by a screw at any point on the scale. With the notch and small conical hole at the top of the sight the gunner lined up the front sight and target

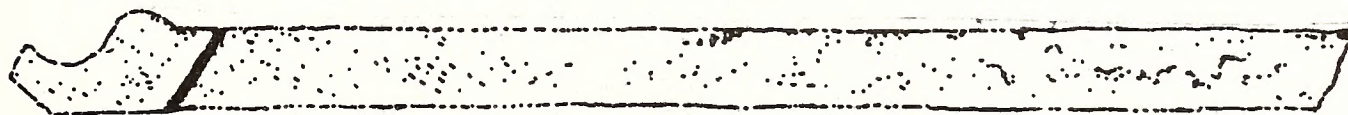
Condition: excellent

Remarks: The No. 741 breechsight has been bent at its lower end, possibly by a Confederate soldier prior to being thrown in the river. Similar damage to equipment can be seen in the chopped spoke on a 6-pounder carriage wheel (#0420) and the broken sponge (#0959). The straight breach-sight's identification number, No. 628, matches the identification number of the mounting bracket on the breech of the Model 1846 32-pounder recovered in 1972.

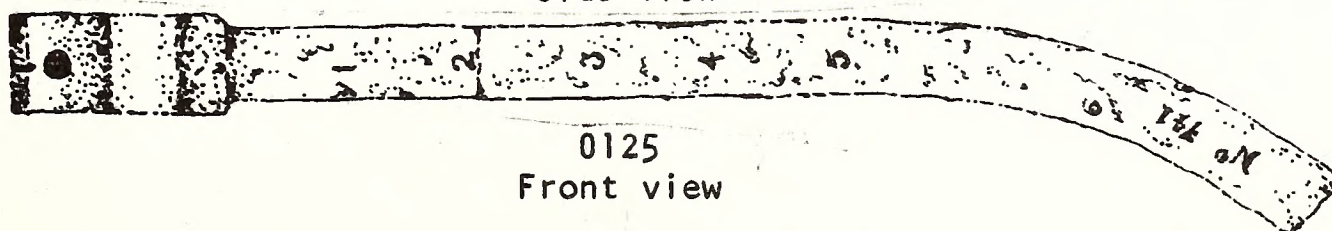
Figure 103: Breechsight Scale: 1/2



0123
Front view



0123
Side view



0125
Front view



0125
Side view



Side View

Artifact: Sponge

NCDAAH: 0959

Size: diameter (wood) 1 1/2 inches; diameter (sponge) 3 1/2 inches;
length (overall) 15 3/4 inches; length (sponge) 8 1/2 inches

Description: a round white oak shaft broken off at one end and a lambs wool
or fleece covering wrapped around and fasted to the other

Condition: good

Remarks: Found within the bore of the 6-pounder fieldpiece with the
brass rear sight mount; it had possibly been partially inserted
and broken in two by a Confederate soldier before the gun was
thrown into the river. Similar damage to equipment can be seen
in the chopped spokes on the 6-pounder carriage wheel and the
bent breech sight

Figure 104 Sponge Scale: 1/2

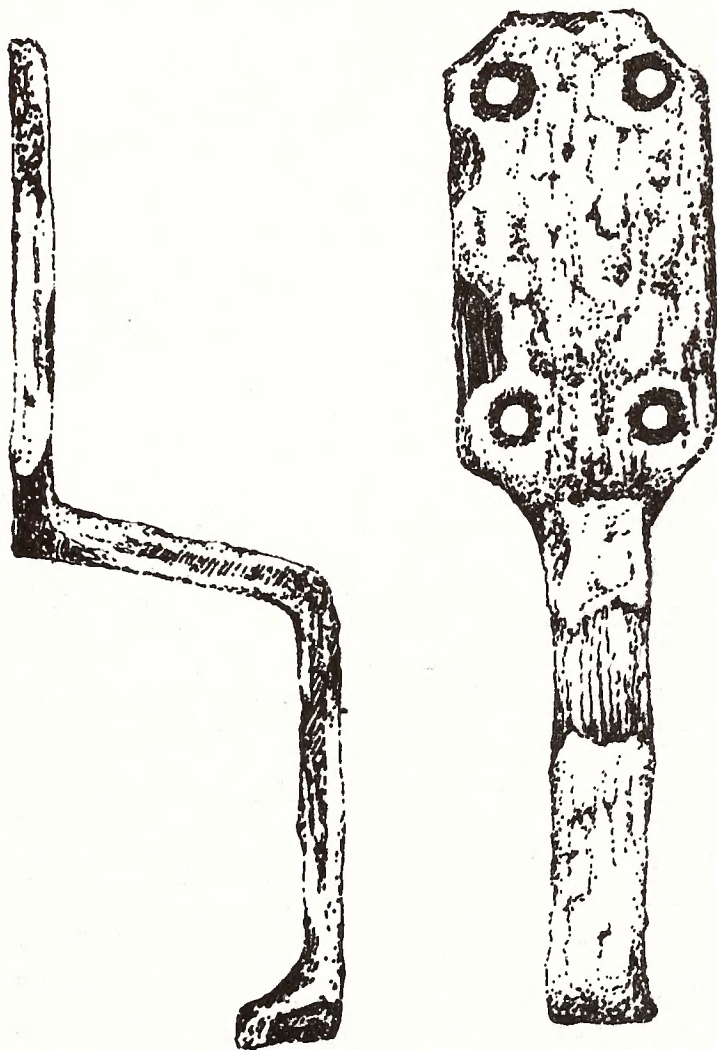
Artifact: Prolonge hook from field carriage

NCDAAH: 0047

Size: length 8 inches; width 2 inches across screw holes

Description: flat iron plate with 4 screw holes attached to angled 1 inch wide handle or hook

Figure 105 Prolonge hook
Scale: 1/2



Chains, Iron

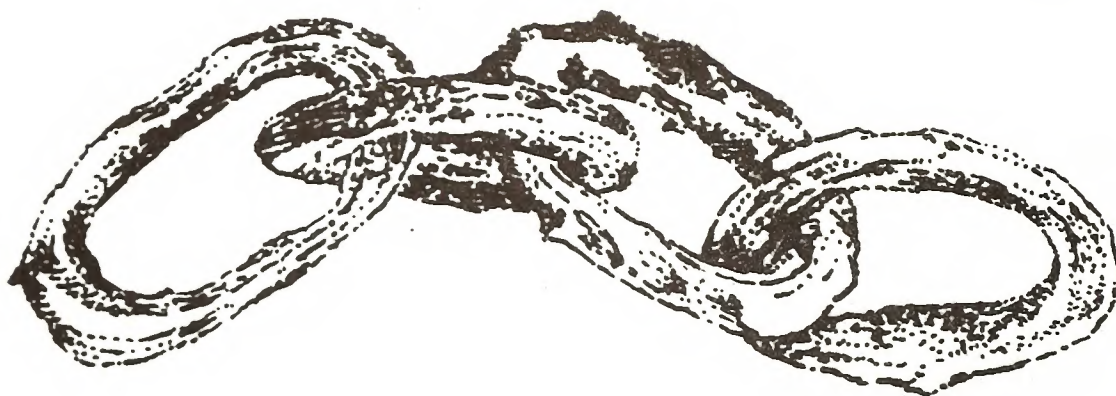
Artifact: 5 inch length of chain

NCDAAH: 0010

Link size: 1.8 inches x .9 inches

Condition: fair

Figure 106 5 inch length of chain Scale: Full



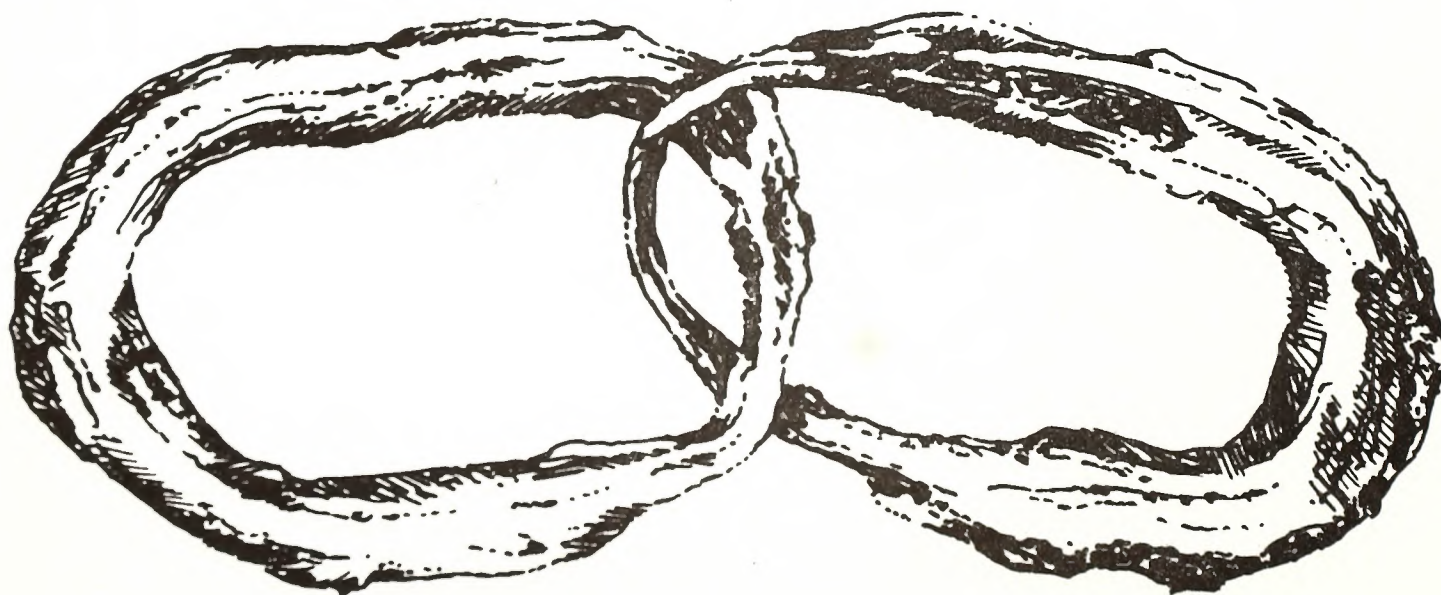
Artifact: Two large chain links

NCDAAH: 0072

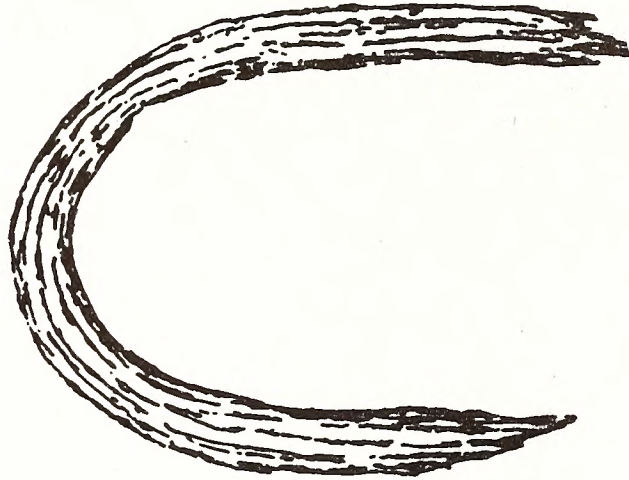
Link size: 3.2 inches x 2.2 inches

Condition: fair

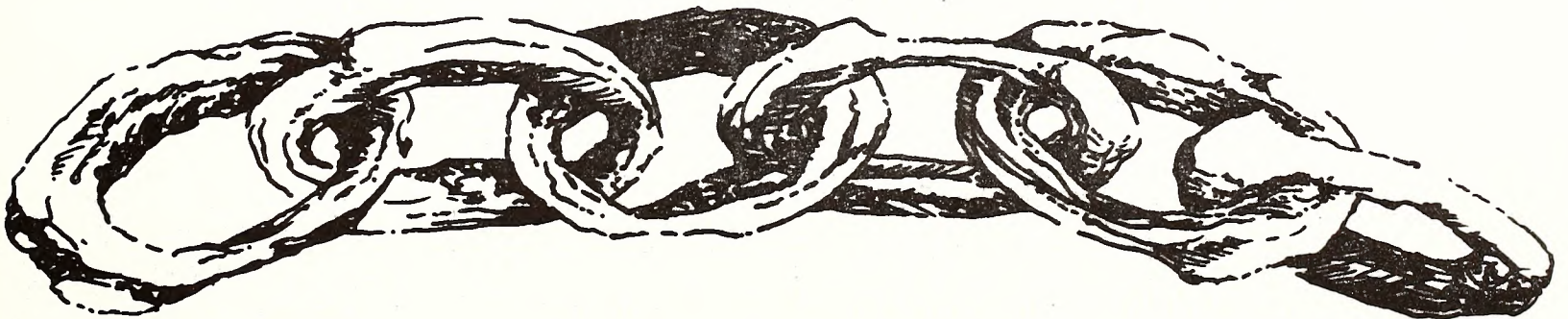
Figure 107 Chain links Scale: Full



Artifact: One chain link fragment
NCDAAH: 0151
Link size: 2 inches x 1.4 inch; one side is broken off
Condition: poor
Figure 108 Chain link fragment Scale: Full



Artifact: 7 inch length of chain
NCDAAH: 0182
Link size: 1.7 inches x .9 inch
Condition: fair
Figure 109 7 inch length of chain Scale: Full



Artifact: 36 inch length of chain

NCDAAH: 0167

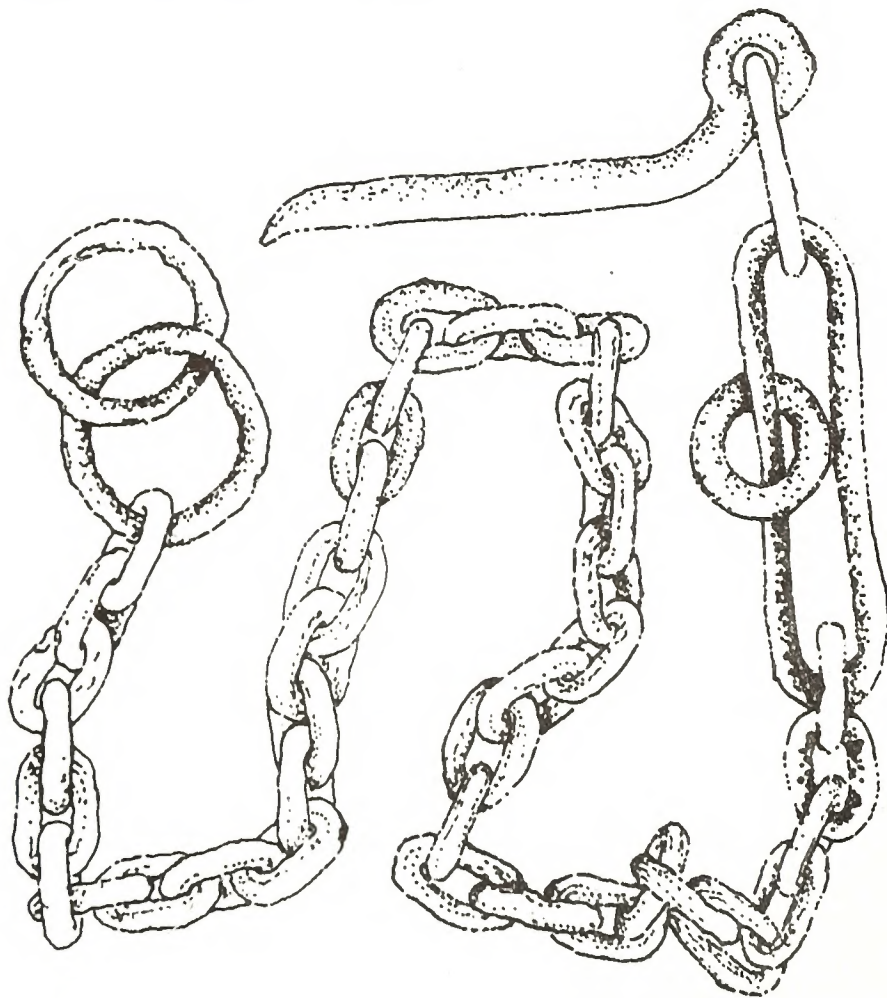
Link size: 1 1/2 inches x 1 inch

Description: has two 2.7 inch diameter rings attached to one end; and one 6 inch x 1 inch link, one 2.7 inch x 1 inch link, one 1 1/2 inch washer, and a 6 inch pin attached to the other end

Association: fragment of lock chain from field carriage

Condition: excellent; probably buried in sand prior to recovery

Figure 110 36 inch length of chain Scale: 1/3



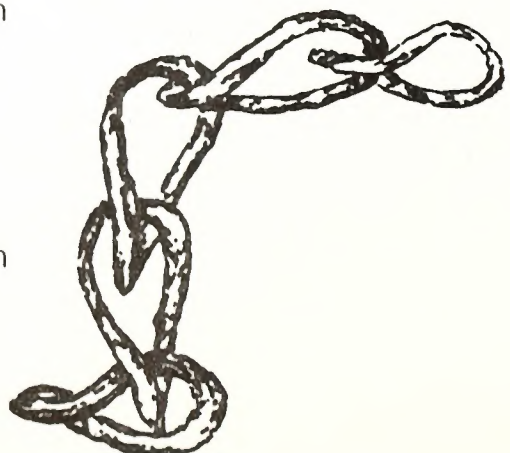
Artifact: 4 inch length of chain

NCDAAH: 0200

Link size: .8 inch x .4 inch

Condition: excellent

Figure 111 4 inch length of chain
Scale: Full



Artifact: 3 links of chain, plus one long link, one pin, and one washer,
all joined

NCDAA: 0187

Size: link size 1.7 inch x 1.2 inch; pin 3 inches x
1/2 inch diameter; washer diameter 1.3 inches;
link 4 inches x 1.2 inch

Association: fragment of lock chain from field carriage

Condition: good

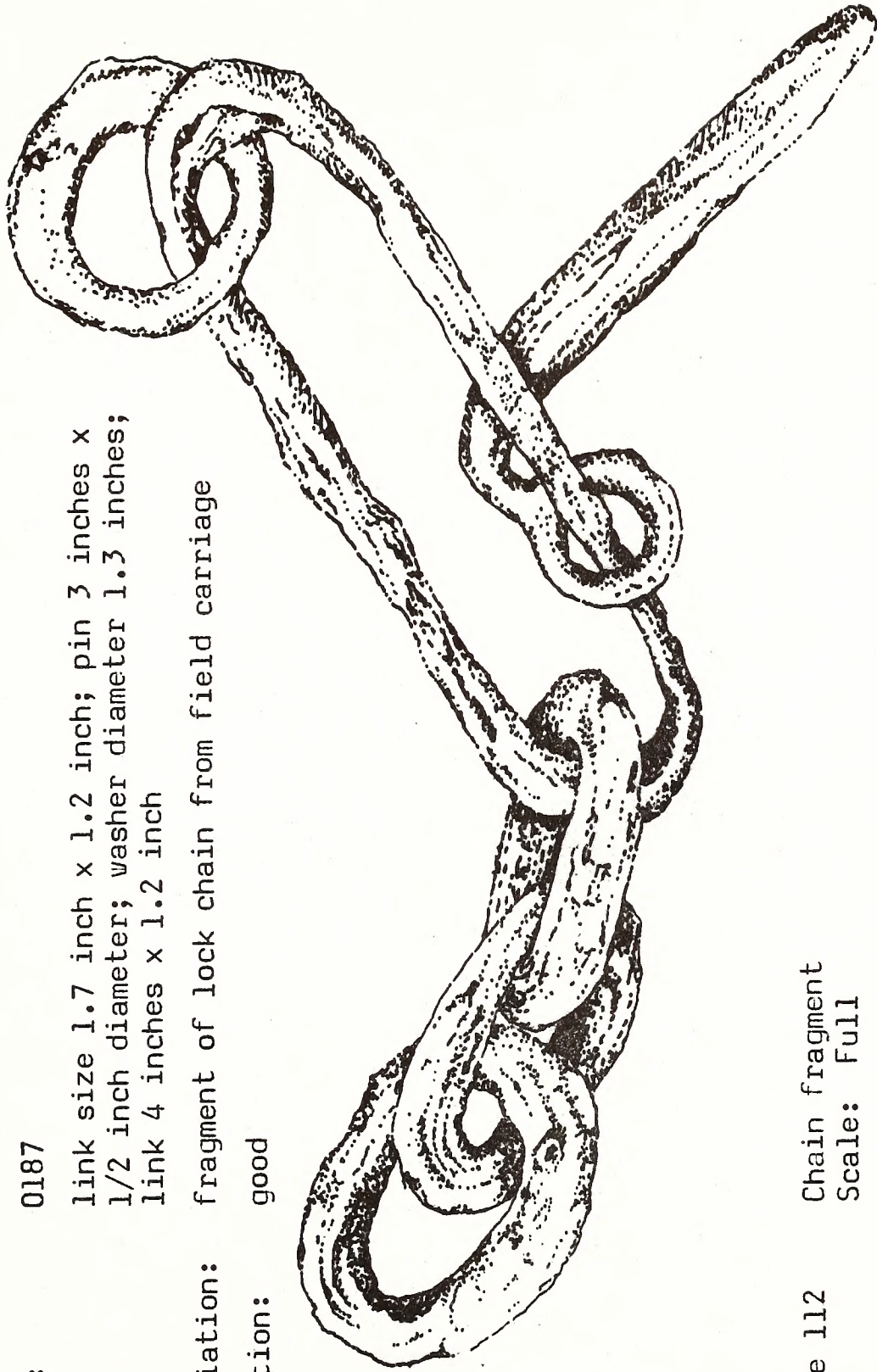


Figure 112 Chain fragment
Scale: Full

Artifact: 7 inch length of chain
NCDAH: 0308
Link size: 1 inch x 1/2 inch
Condition: good
Figure 113 7 inch length of chain
Scale: Full



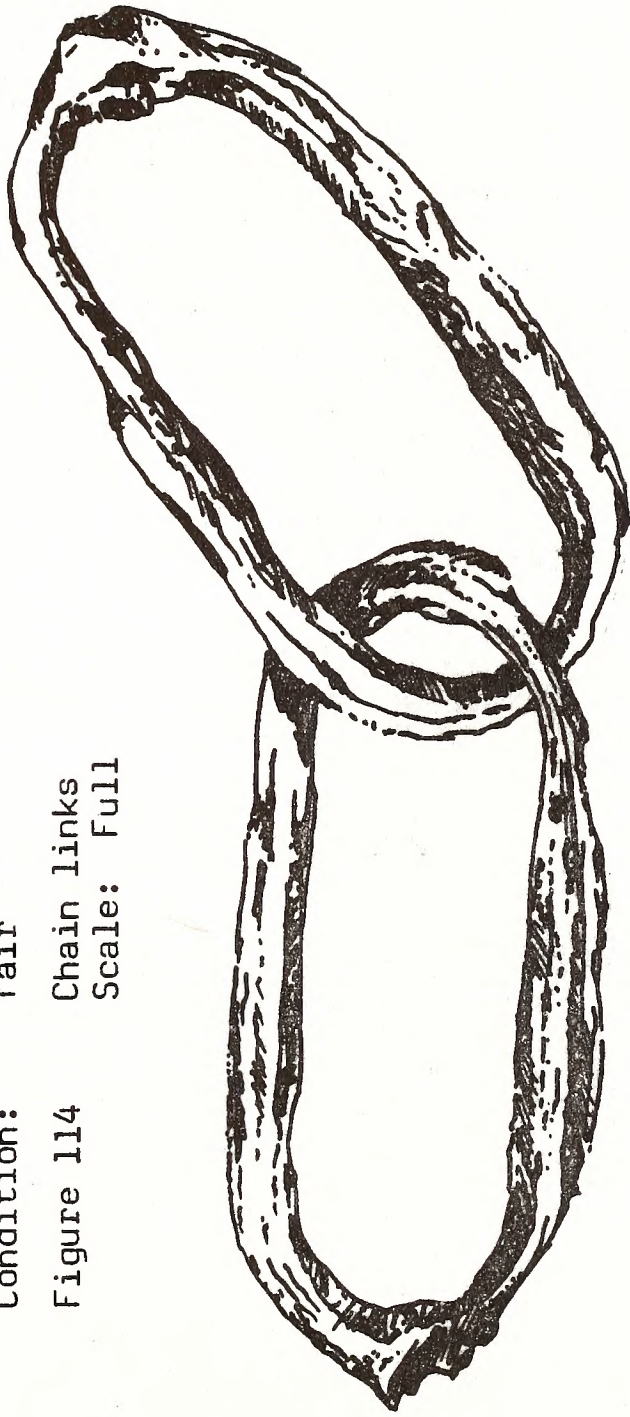
Artifact: Two chain links

NCDAAH: 0331

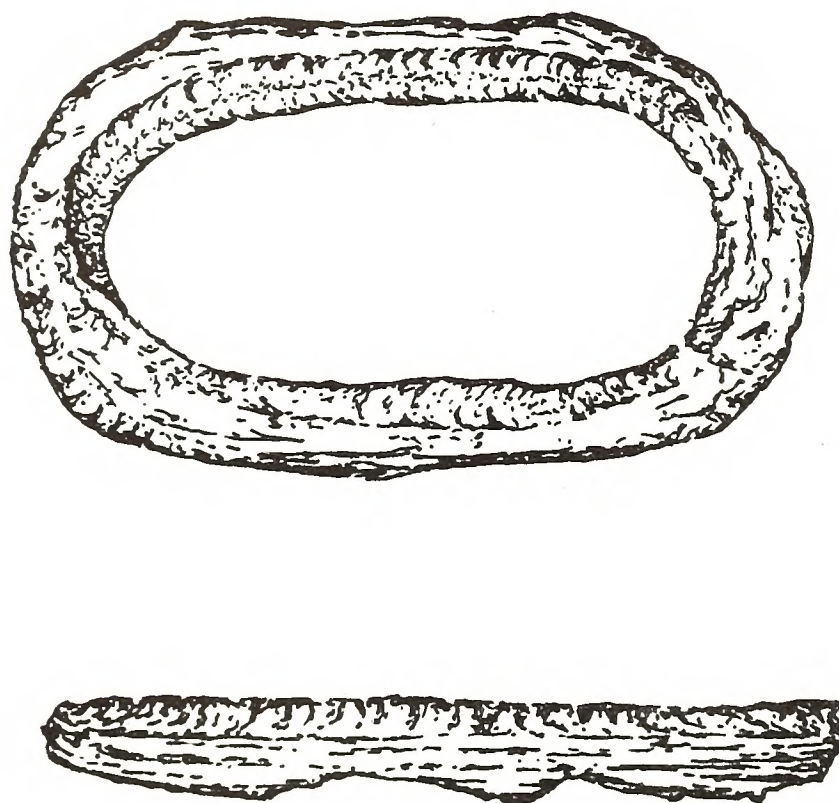
Link size: 3.3 inches x 1.6 inches

Condition: fair

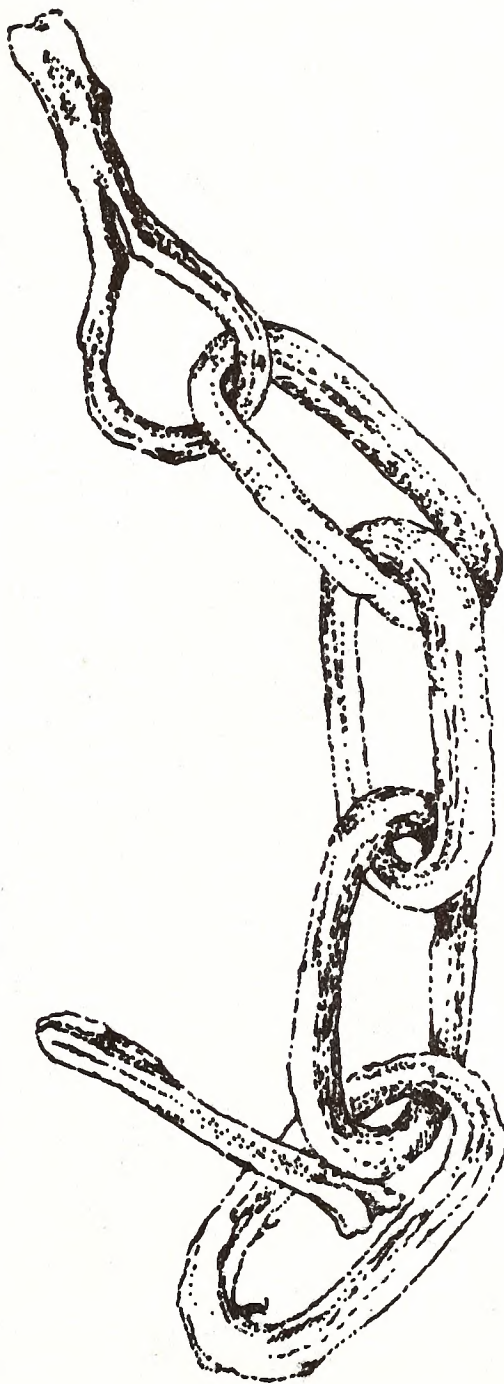
Figure 114 Chain links
Scale: Full



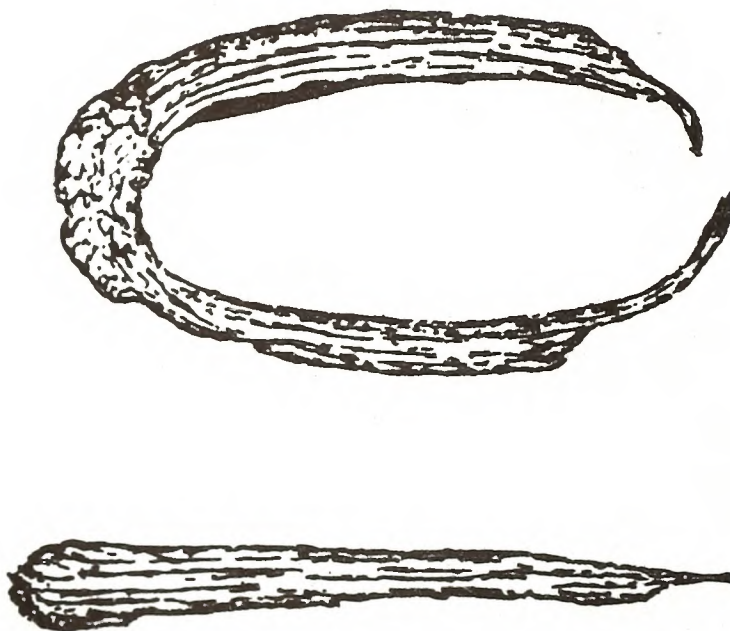
Artifact: Chain link
NCDAAH: 0333
Link size: 3.2 inches x 1.9 inches
Condition: fair
Figure 115 Chain link
Scale: Full



Artifact: 15 inch length of chain
NCDAAH: 0188
Link size: 3 inches x 1.4 inches
Description: last link on one end is round; 1.5 inch diameter, with a 1 1/2 inch x 1/2 inch x 1/2 inch projection
Condition: good
Figure 116 15 inch length of chain
Scale: 1/2



Artifact: one chain link, broken
NCDAAH: 0980
Link size: 2.8 inches x 1.4 inches; missing a 1/2 inch
piece
Condition: poor
Figure 117 Chain link
Scale: Full



Artifact: Three chain links

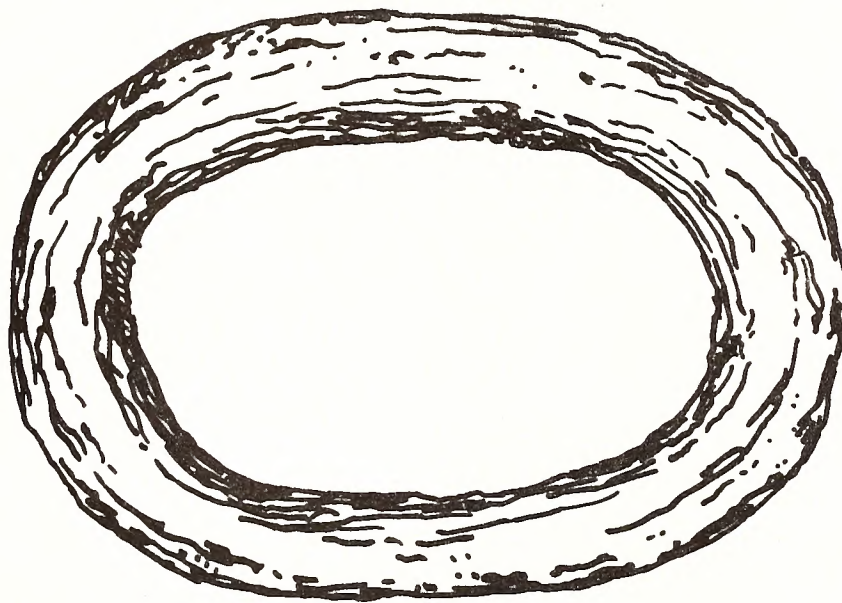
NCDAAH: 0978

Link size: 3.3 inches x 2.4 inches

Description: one link intact; one missing 1/6 of circumference; one missing 2/5 of circumference

Condition: fair

Figure 118 Chain links
Scale: Full



Artifact: 5 foot length of chain

NCDAH: 0310

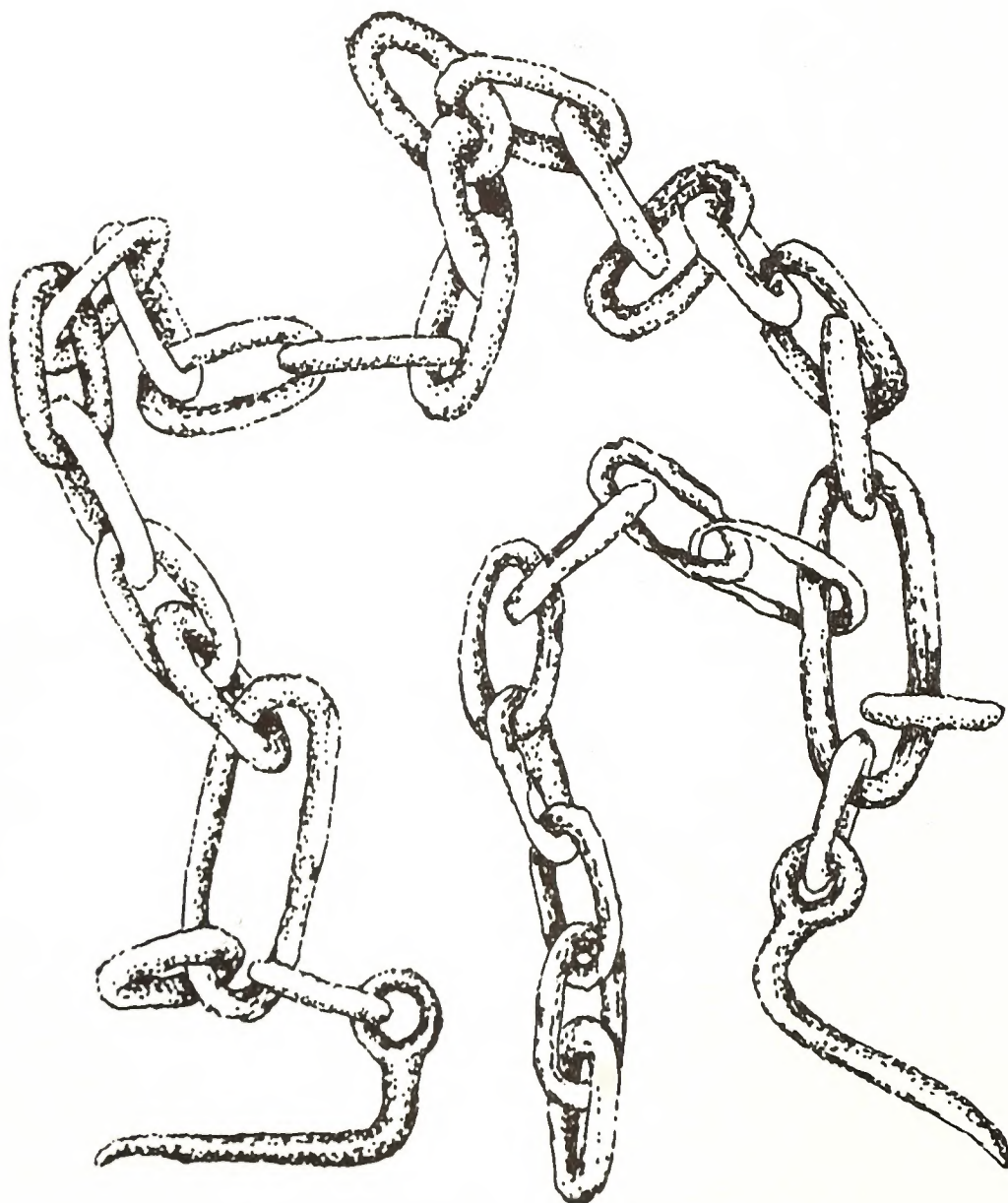
Description: link size 2.8 inches x 1.2 inches; has two 4 inch x 1/2 inch pins attached to two long links 4 inches x 1 1/2 inches; long links also have 1 1/2 inch diameter rings attached

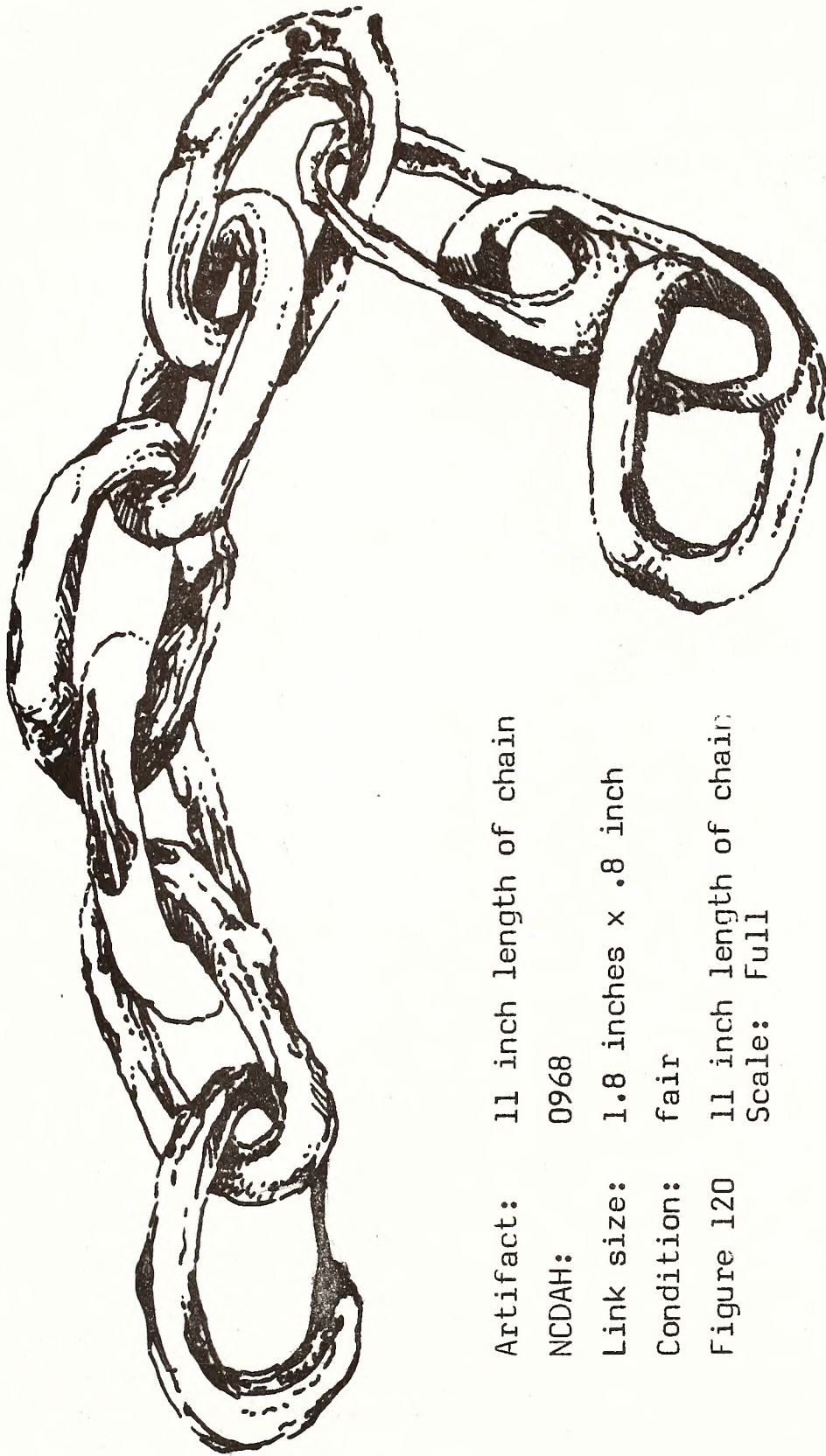
Association: fragment of lock chain from field carriage

Condition: excellent

Figure 119 5 foot length of chain

Scale: 1/3





Artifact: 11 inch length of chain
NCDAH: 0968
Link size: 1.8 inches x .8 inch
Condition: fair
Figure 120 11 inch length of chain
Scale: Full

Wood



End View

Artifact: Wooden block

NCDAAH: 0097

Size: 6 inches x 6 inches x 18
inches

Association: block for cutting shingles

Condition: excellent

Figure 121 Wooden block
Scale: 1/3



Artifact: Wooden post
NCDAAH: 0103
Size: diameter 3 3/4 inches; length 3 feet
Description: has four 2 inch diameter holes spread evenly along length; one hole is badly eroded
Condition: good
Figure 122 Wooden post
Scale: 1/6

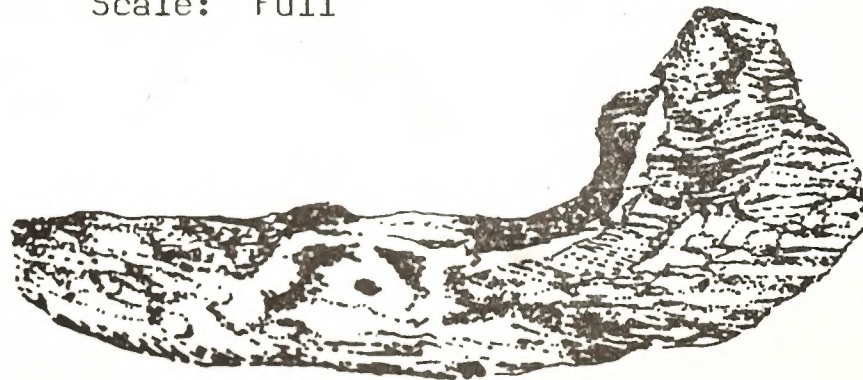


End View

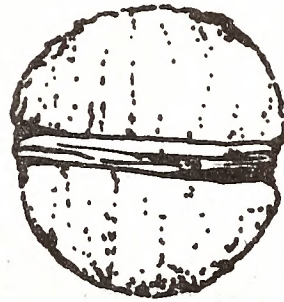
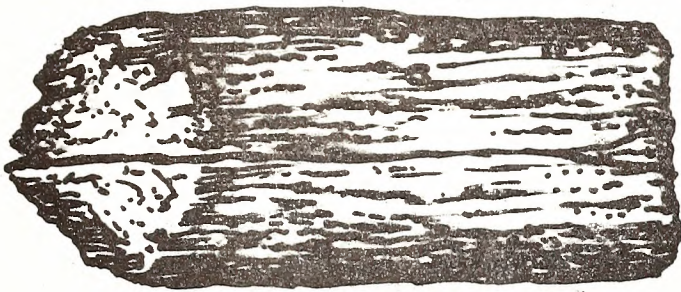
Artifact: Unidentified piece of wood
 NCDAAH: 0138
 Size: length 15 inches; width 3 inches to 1 inch;
 thickness (tapers) 2 inches to 3/4 inch
 Condition: fair
 Figure 123 Unidentified piece of wood
 Scale: 1/3



Artifact: Unidentified piece of wood
 NCDAAH: 0139
 Size: 3 inches x 1 inch x 3/4 inch
 Association: cheek fragment from field carriage
 Condition: good
 Figure 124 Unidentified piece of wood
 Scale: Full

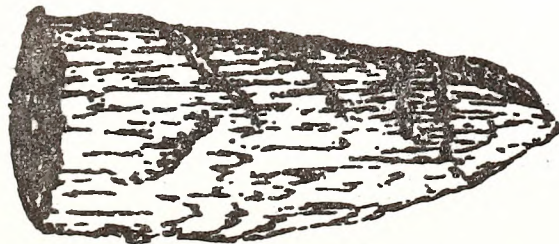


Artifact: Trunnel
 NCDAAH: 0144
 Size: diameter $\frac{3}{4}$ inch; length $2 \frac{1}{2}$ inches
 Description: has $\frac{1}{8}$ inch thick wedge driven into middle of one end, approximately $\frac{1}{2}$ inch deep
 Condition: excellent
 Figure 125 Trunnel
 Scale: Full



Bottom View

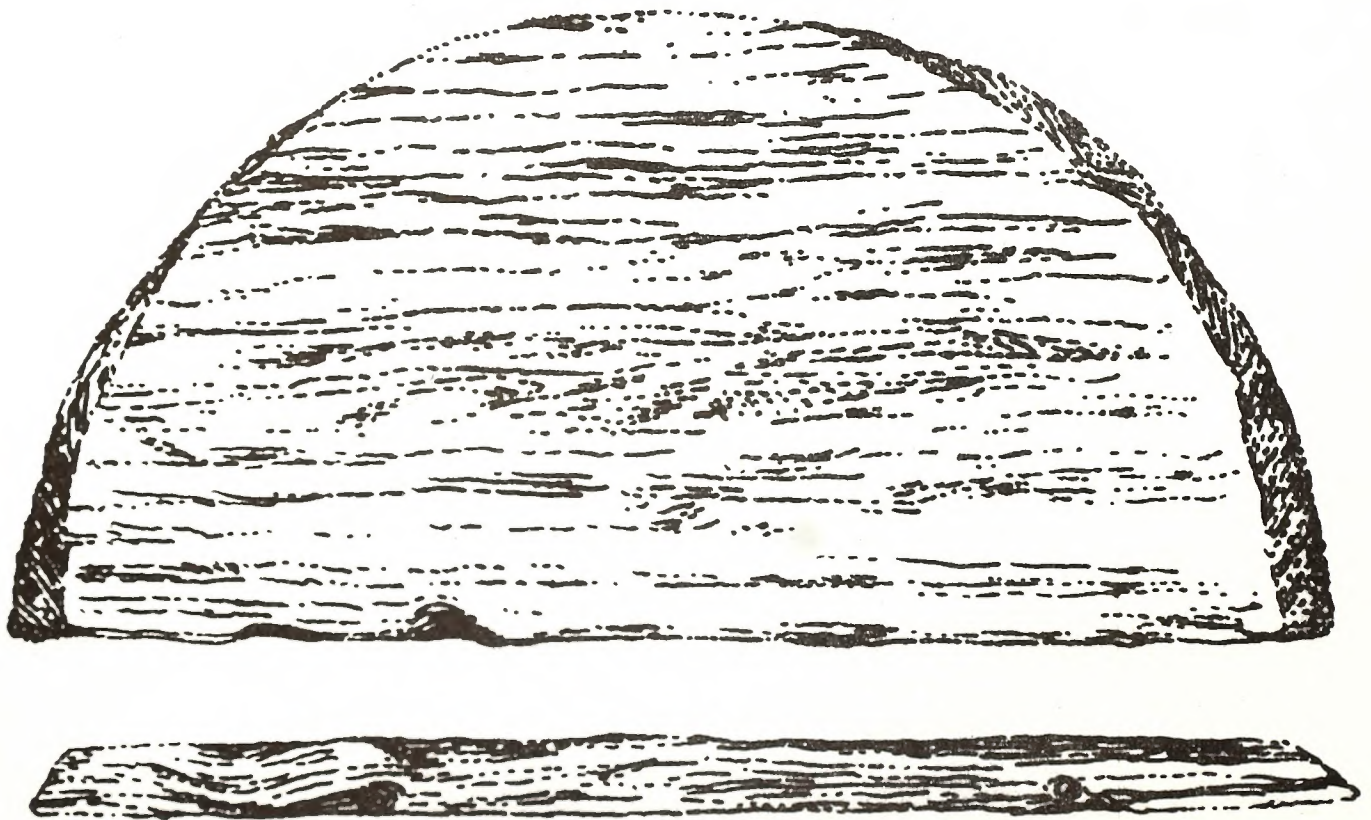
Artifact: Unidentified piece of wood
 NCDAAH: 0150
 Size: cone shaped; diameter at base $\frac{3}{4}$ inch; length $2 \frac{1}{2}$ inches
 Association: trunnel between felloes of English iron carriage wheel
 Condition: good
 Figure 126 Unidentified piece of wood
 Scale: Full



Artifact: Unidentified piece of wood
 NCDAAH: 0156
 Size: 4 inches x 1 inch x 3/4 inch
 Condition: fair
 Figure 127 Unidentified piece of wood
 Scale: Full



Artifact: Half of a wooden disc
 NCDAAH: 0170
 Size: diameter 16 inches; thickness 3/4 inch
 Association: half of a barrel end
 Condition: excellent
 Figure 128 Half of a wooden disc Scale: 1/3



Artifact: Unidentified piece of wood
NCDAM: 0145
Size: 3 inches x 3/4 inch x 1/2 inch
Condition: fair
Figure 129 Unidentified piece of wood
Scale: Full





Artifact: Half of a wooden disc NCDAB: 0179 Size: diameter 6 1/2 inch

Association: half of a barrel or keg end Condition: fair

Figure 130 Half of a wooden disc Scale: Full

Artifact: Unidentified piece of wood
NCDAH: 0152
Size: 6 inches x 1 1/2 inches x 1/2 inch
Condition: fair

Figure 131 Unidentified piece of wood

Scale: Full



Artifact: Unidentified piece of wood
NCDAAH: 0189
Size: 4 3/4 inches x 1 inch x 3/4 inch; pointed at
one end
Condition: fair
Figure 132 Unidentified piece of wood
Scale: Full



Artifact: Unidentified piece of wood
NCDAH: 0196
Size: 17 inches x 3 inches x 1 inch; rectangular
Condition: fair
Figure 133 Unidentified piece of wood
Scale: 1/3



Artifact: Unidentified piece of wood

NCDAH: 0198

Size: 18 inches x 3 to 3 1/2 inches x 1 inch

Condition: fair

Figure 134 Unidentified piece of wood

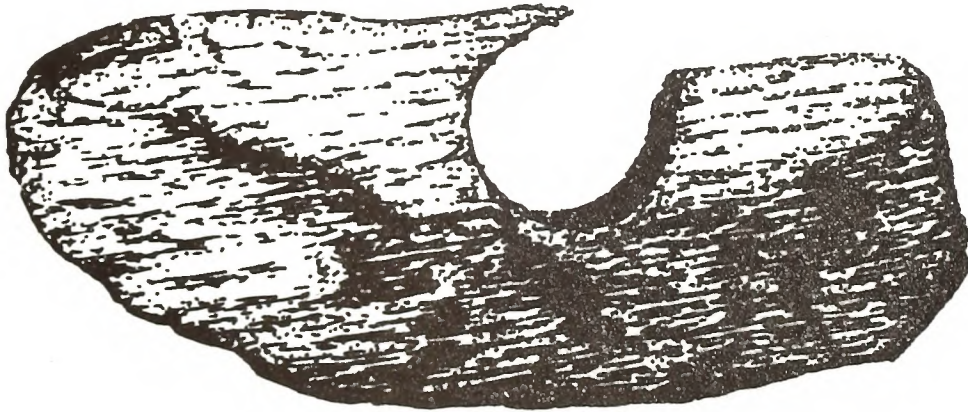
Scale: 1/3



Artifact: Unidentified piece of wood
NCDAA: 0199
Size: 20 inches x 6 inches x 1/2 inch; rectangular
Association: shingle
Condition: excellent
Figure 135 Unidentified piece of wood
Scale: 1/3



Artifact: Unidentified piece of wood
NCDAAH: 0202
Size: 3 3/4 inches x 1 1/2 inches x 1 inch
Description: 3/4 inch hole in middle; open on one side
Association: cheek fragment from field carriage; hole would
be for metal spike
Condition: good
Figure 136 Unidentified piece of wood



Artifact: Spoke fragment from carriage wheel

NCDAAH: 0983

Size: length 13 inches; width at base 2 inches; width at pointed end 1/2 inch

Description: 2 inch x 1 1/2 inch elliptical base tapering along length to 1/2 inch at point. Base has 1 inch diameter, 1/2 inch high cylindrical tenon which fits mortice in hub or felloe

Condition: good

Figure 137 Spoke fragment from carriage wheel

Scale: 1/2



Bottom View

Artifact: Unidentified piece of wood
NCDAAH: 0205
Size: 2 1/2 inches x 1/2 inch x 1/2 inch
Condition: fair
Figure 138 Unidentified piece of wood
Scale: Full



Artifact: Unidentified piece of wood
NCDAAH: 0143
Size: 4 inches x 3/4 inch x 1/2 inch
Condition: fair
Figure 139 Unidentified piece of wood
Scale: Full



Ring Fasteners

Artifact: Ring fasteners Recovered: 15 tags, 24 pieces

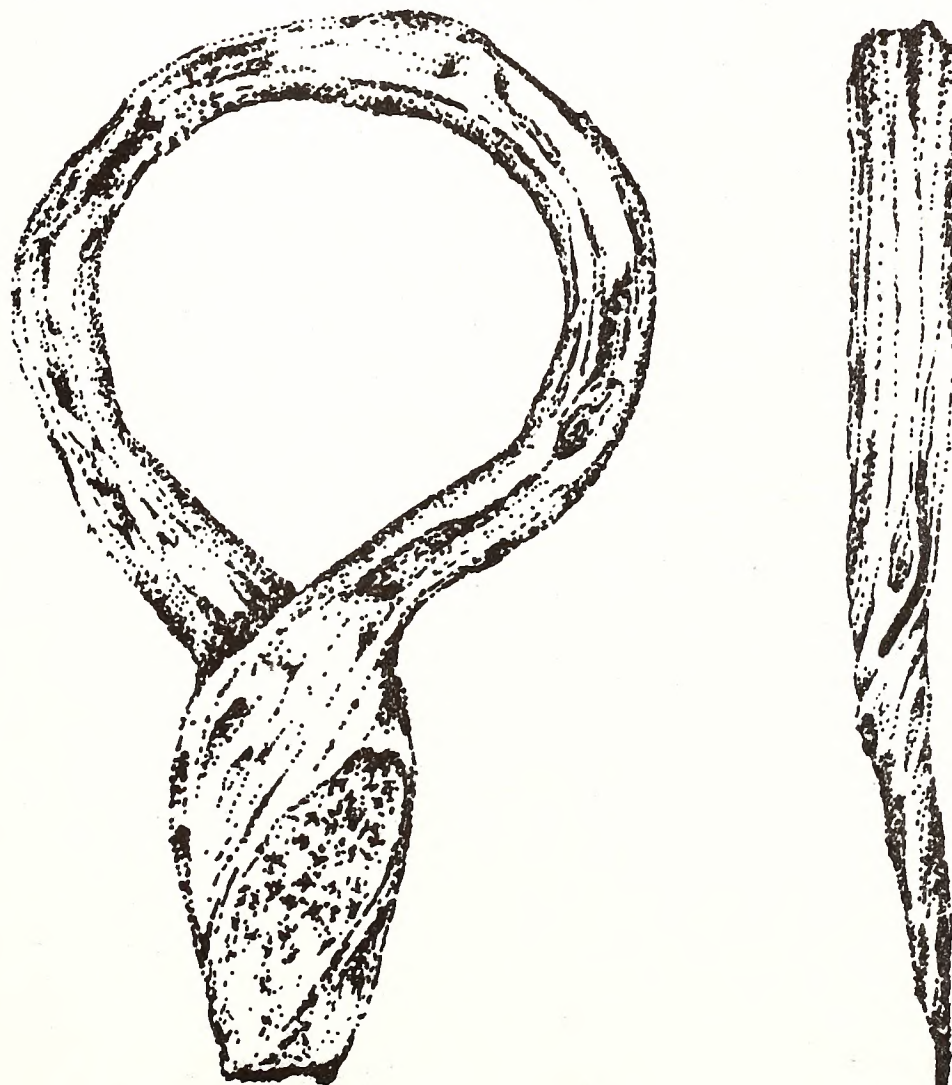
NCDAAH: 0034 (one fastener), 0037 (2), 0039 (2), 0043 (4),
0050 (3), 0054 (1), 0073 (3), 0075 (1), 0102 (1),
0108 (1), 0109 (1), 0133 (1), 0157 (1), 0965 (1)

Size: varies slightly; ring OD 2 inches to 2 3/4 inches;
ring ID 1 1/2 inches to 2 1/4 inches; pointed pro-
jection length 1 1/2 inches to 2 inches, width at
widest point 3/4 inch to 1 1/4 inch, thickness
1/16 inch to 1/4 inch depending on amount of cor-
rosion

Description: single pieces of wrought iron made by bending an
iron rod into a circle and beating the connecting
ends into a flat point

Remarks: used during logging operations; flat point was
driven into a log, then rope was strung through
the ring to keep rafts of logs from separating
on the way to the sawmill

Condition: fair to good Figure 140 Ring fastener
Scale: Full



Miscellaneous Artifacts

Artifact: Fragment of curved iron band

NCDAAH: 0021

Size: 1 1/2 inches x 9 inches, 1/4 inch

Description: 3/8 inch hole in one end

Association: (1) fragment of a nave band with one nail hole
(2) barrel hoop fragment

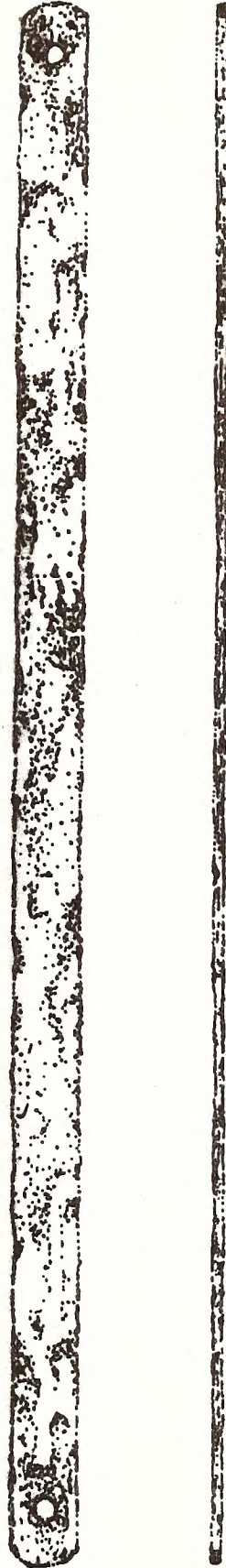
Condition: poor

Figure 141 Band fragment

Scale: 1/2



Artifact: Iron strap
NCDAAH: 0012
Size: 1/4 inch x 1 inch x 26 inches
Description: 1/2 inch hole in each end;
curved ends
Condition: excellent
Figure 142 Iron strap
Scale: 1/4



Artifact: Pipe, probably modern, ferrous
NCDAAH: 0006
Size: diameter 2 inches; length 4 feet
Condition: fair
Figure 143 Ferrous pipe
Scale: 1/6

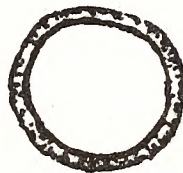


Artifact: Handle, brass
 NCDAAH: 0022
 Size: diameter (base) 11/16 inch; diameter (narrowest) 1/2 inch; diameter (end) 5/8 inch; length 2 3/4 inches
 Description: round brass handle apparently bent and broken off at base
 Condition: good
 Figure 144 Brass handle
 Scale: Full

Top
View



Artifact: Tubing, threaded, brass or copper
 NCDAAH: 0031
 Size: diameter 5/8 inch; length 1 inch; thickness 1/16 inch; threading (outside) 3/8 inch; threading (inside) 3/8 inch
 Description: brass or copper connecting pipe threaded on the outside at one end and on the inside of the other
 Remarks: possibly modern
 Condition: fair
 Figure 145 Tubing
 Scale: Full



Top View



Side View

Artifact: Iron band fragment, curved
 NCDAAH: 0023
 Size: 1 1/2 inches x 9 1/2 inches x 1/4 inch
 Association: (1) portion of barrel hoop; (2) portion of nave
 band
 Condition: poor
 Figure 146 Iron band fragment Scale: 1/2



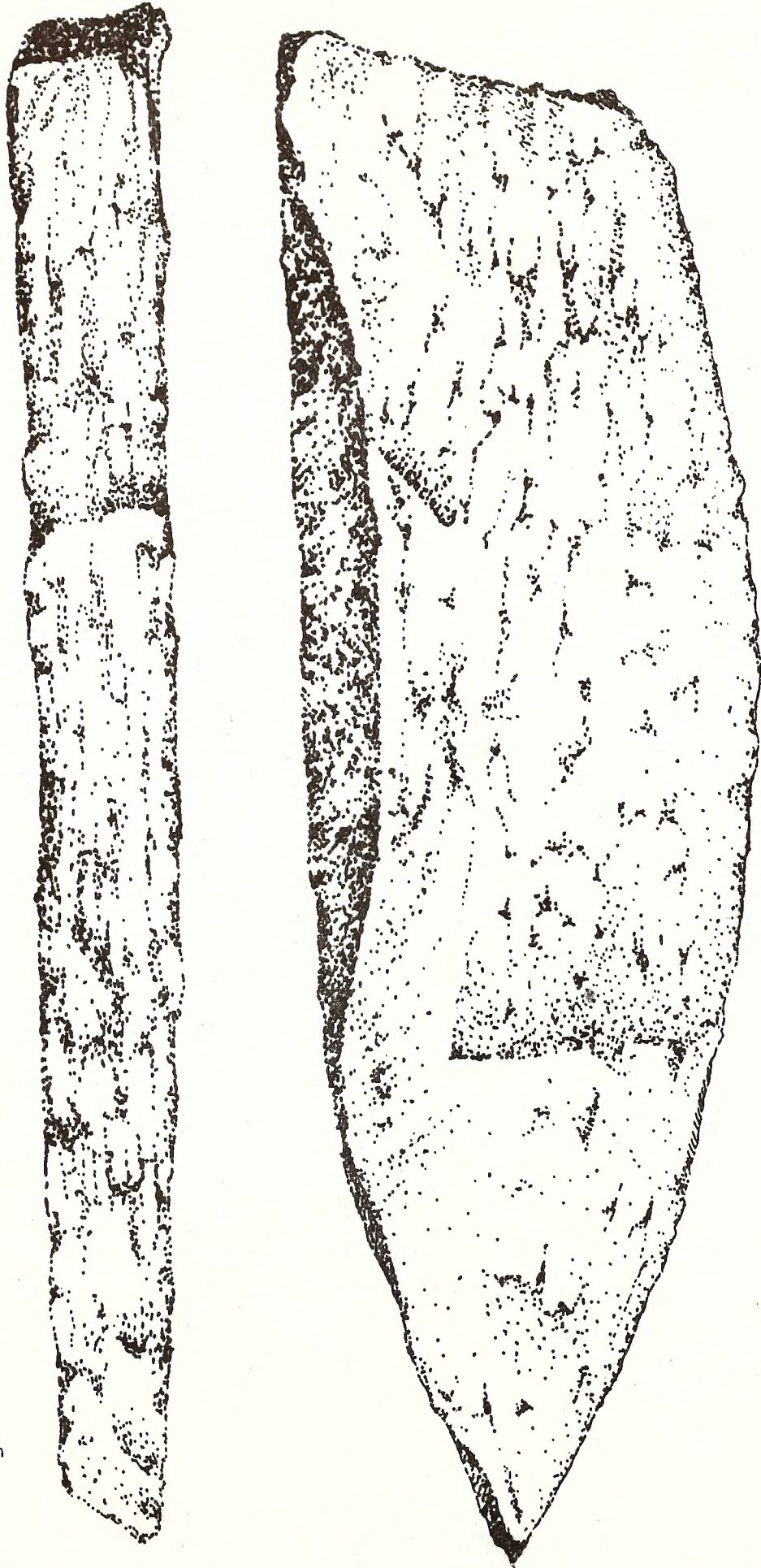
Artifact: Unidentified piece of iron
 NCDAAH: 0058
 Size: 3 7/8 inches x 2 1/2 inches x 1/2 inch
 Association: shell fragment Condition: good
 Figure 147 Unidentified piece of iron
 Scale: Full



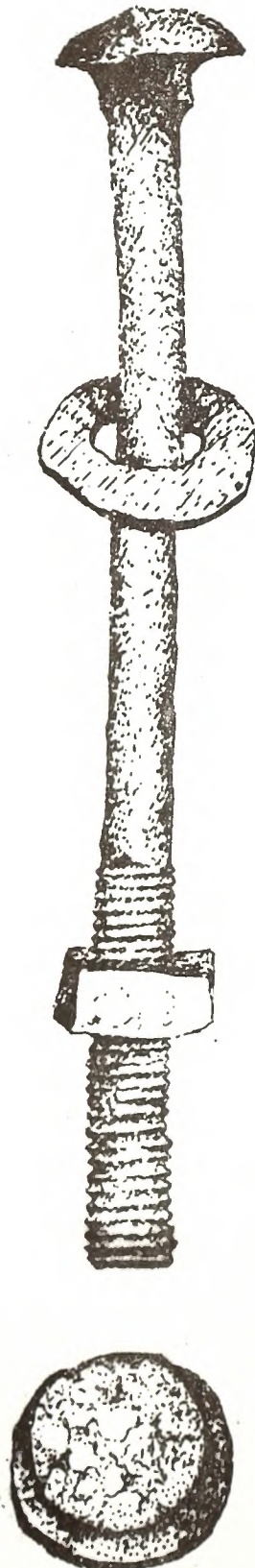
NCDAH: 0042
Condition: excellent;
possibly modern
Scale: Full

Artifact: Flat-pointed piece of iron, unidentified
Size: 7 1/2 inches x 2 inches x 3/4 inch

Figure 148 Piece of iron



Artifact: Bolt with washer and nut, iron
NCDAAH: 0048
Size: shaft diameter 5/16 inch; head diameter 5/8
inch length 5 5/8 inches
Condition: excellent; possibly modern
Figure 149 Bolt with washer and nut
Scale: Full



Top View

Artifact: Shell fragment, iron

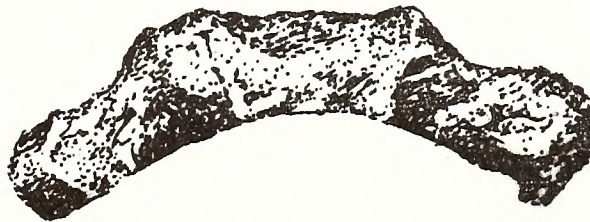
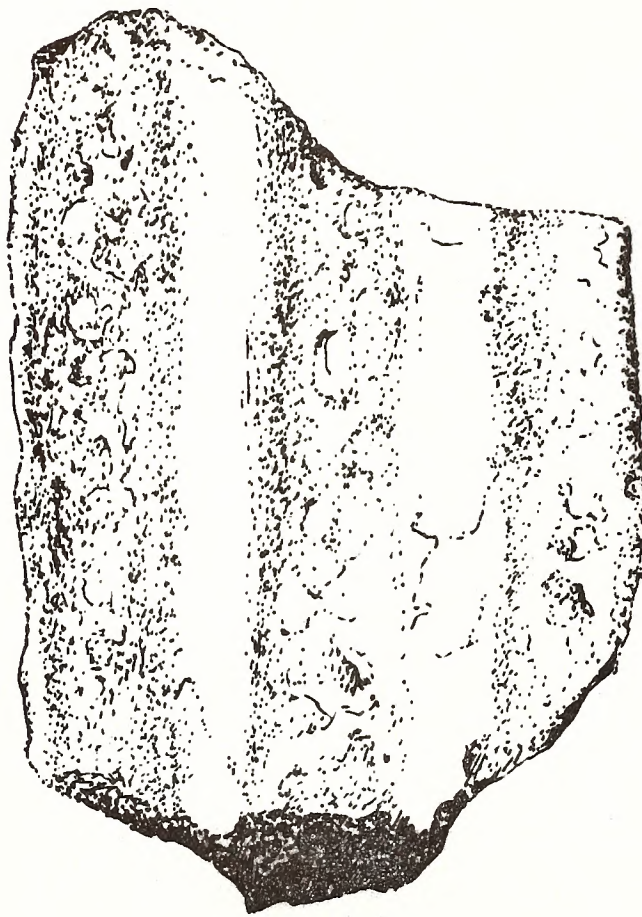
NCDAAH: 0051

Size: 3 inches x 2 inches x 1/2 inch

Description: has three ridges and two grooves running lengthwise; tentative identification

Condition: good

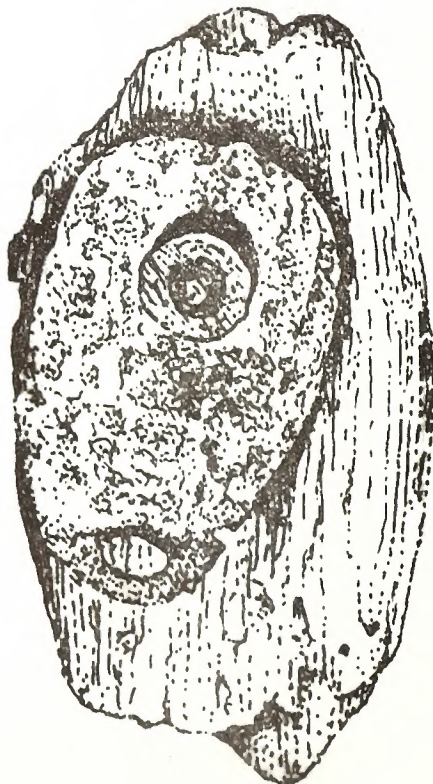
Figure 150 Shell fragment Scale: Full



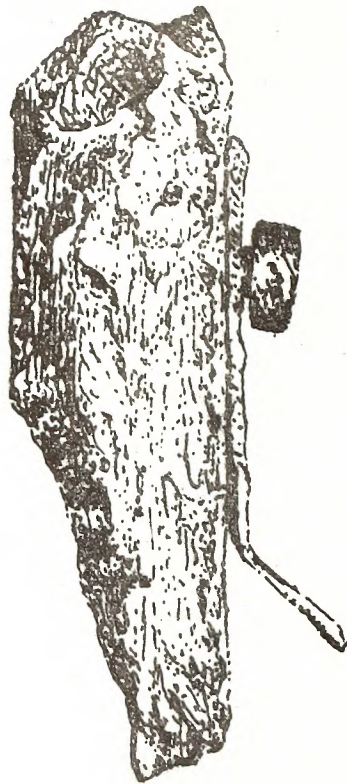
End View

Artifact: Wooden piece with iron bracket and bolt attached
 NCDAAH: 0052
 Size: bolt head diameter 1 inch; 9 inches x 4 3/4 inches x 2 inches
 Description: bracket has 3/4 inch hole in end and measures 3 inches x 4 1/2 inches; bolt was oxidized completely 1/2 inch below head
 Association: fragment of missing 36 inch sections of two field carriage trail stocks
 Condition: good

Figure 151 Wooden piece with iron bracket and bolt attached
 Scale: 1/3



Side View



Top View

Artifact: Mounting, iron

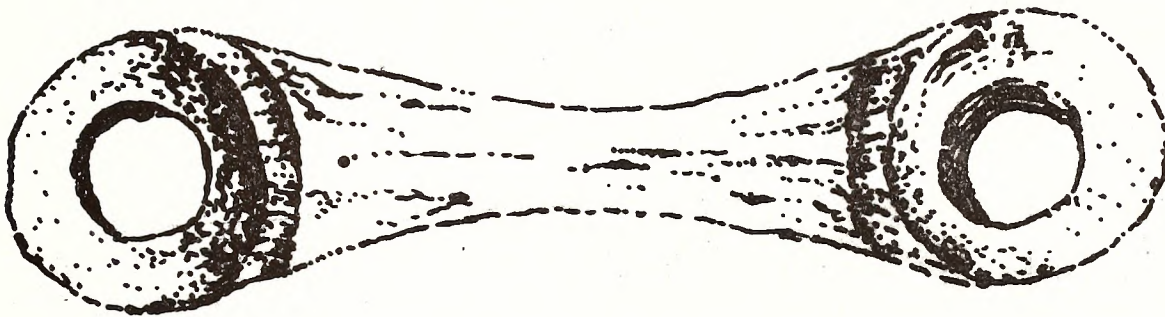
NCDAAH: 0053

Size: length 4 3/4 inches; 1/2 inch hole in each end

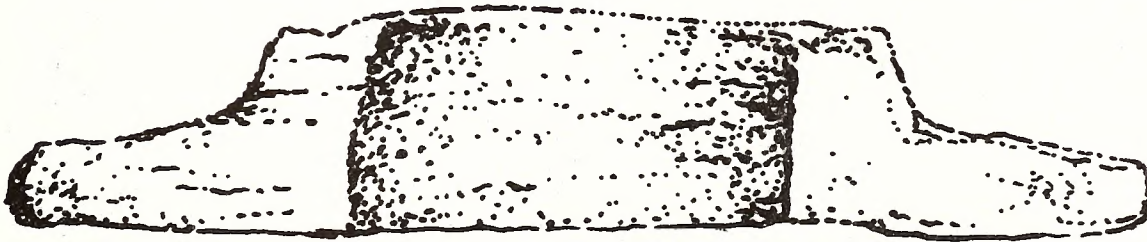
Association: Iron spring shackle

Condition: excellent

Figure 152 Mounting
Scale: Full

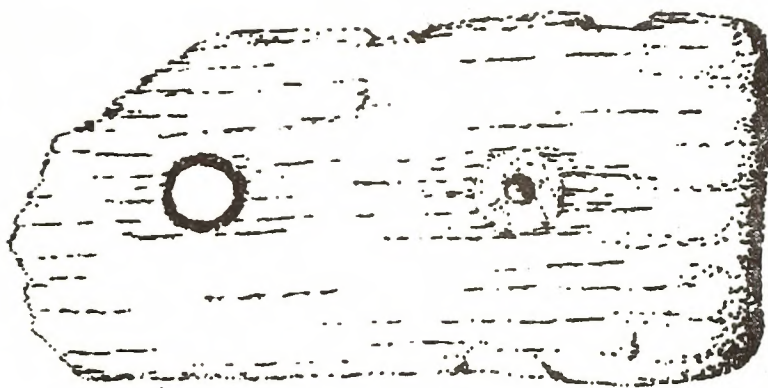


Top View



Side View

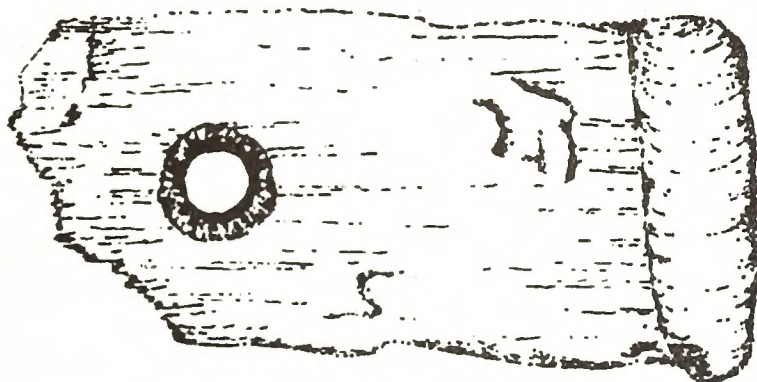
Artifact: Iron hinge fragment NCDAAH: 0055
 Size: 3 1/2 inches x 1 1/2 inches x 1/4 inch
 Description: two screw holes Condition: fair
 Figure 153 Hinge fragment Scale: Full



Top View



Side View



Bottom View

Artifact: Iron pipe NCDAAH: 0077
 Size: diameter 1 inch; length 19 inches
 Condition: poor Figure 154 Pipe Scale: Full

Top
View

Artifact: Unidentified piece of iron

NCDAH: 0063

Size: 3 inches x 1 1/2 inches at wide end

Description: pointed at one end; one curved end; two straight sides

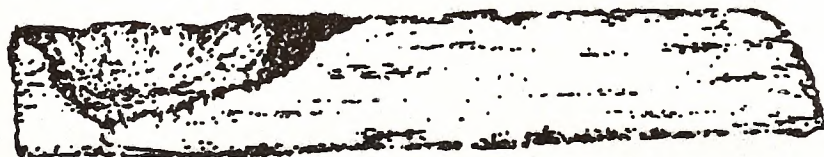
Association: base plate fragment from stand of grape shot

Condition: good

Figure 155 Unidentified piece of iron
Scale: Full



Top View



Side View

Artifact: Unidentified circular knob, iron

NCDAAH: 0074

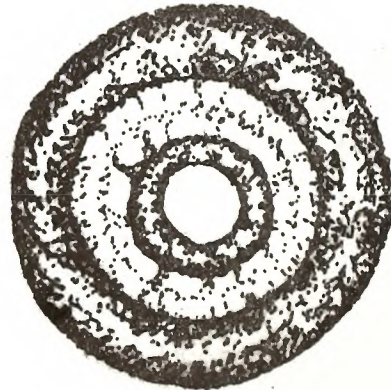
Size: diameter 1 3/4 inches; thickness 7/8 inch

Description: small hole in center

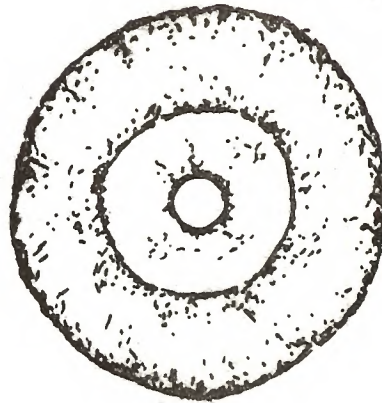
Association: shell nose cone

Condition: excellent

Figure 156 Unidentified circular knob
Scale



Top View



Bottom View



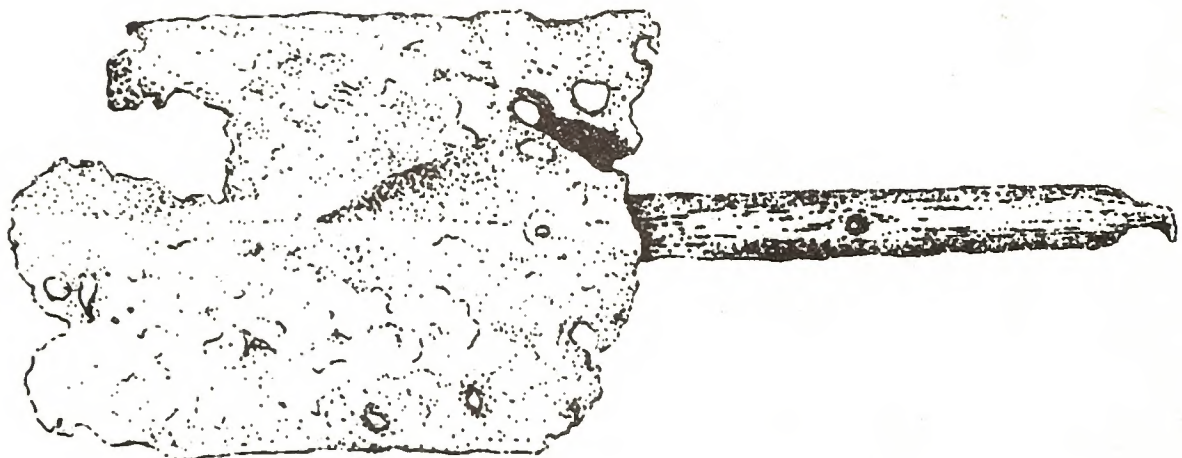
Perspective
Side View

Artifact: Iron pipe
NCDAH: 0078
Size: diameter 1 inch; length 16 inches
Condition: poor
Figure 157 Pipe
Scale: 1/3

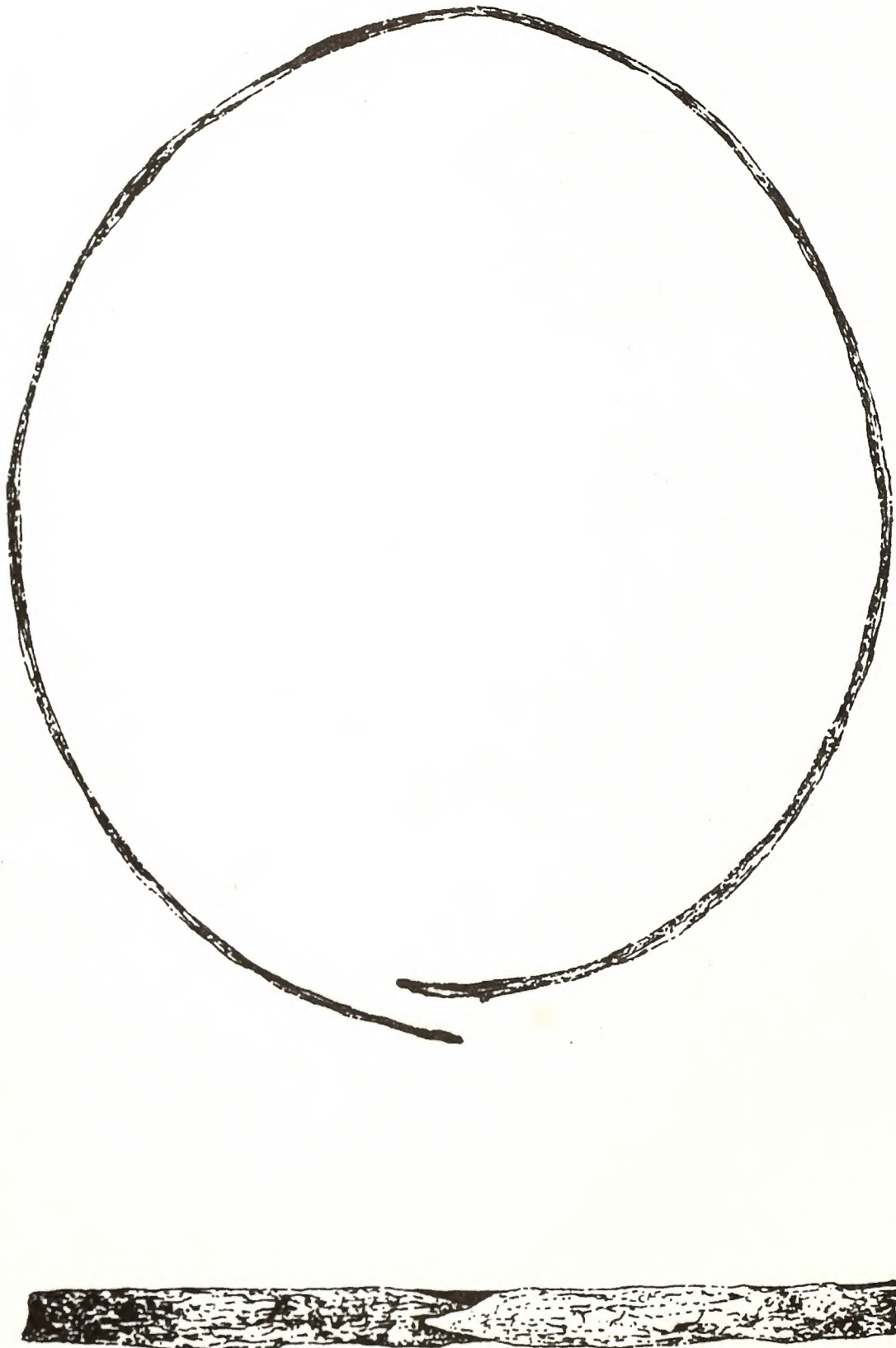


Top
View

Artifact: Iron shovel blade with portion of wooden handle
NCDAAH: 0087
Size: handle diameter 1 inch; handle length 10 inches;
blade 10 inches x 7 inches
Description: blade badly corroded; one screw hole for attaching handle
Condition: fair
Figure 158 Shovel
Scale: 1/4

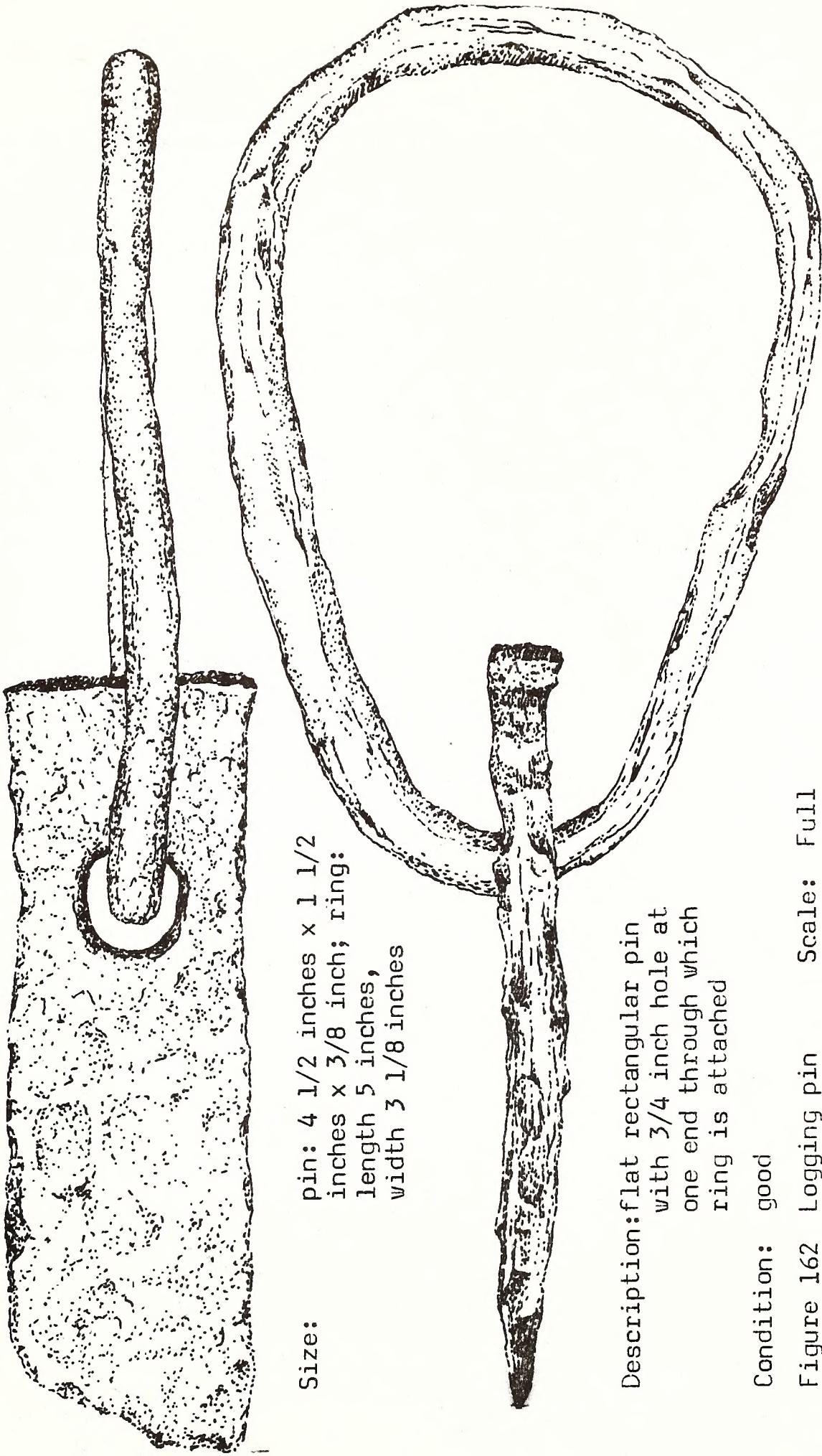


Artifact: Iron band, complete NCDAAH: 0098
Size: diameter 19 inches; width 1 1/2 inches; thick-
 ness 1/4 inch
Description: broken in one place
Association: barrel hoop Condition: good
Figure 161 Iron band Scale: 1/4



NCDAH: 0121

Artifact: Iron logging pin, ring attached



Size: pin: 4 1/2 inches x 1 1/2 inches x 3/8 inch; ring: length 5 inches, width 3 1/8 inches

Description: flat rectangular pin with 3/4 inch hole at one end through which ring is attached

Condition: good

Figure 162 Logging pin Scale: Full

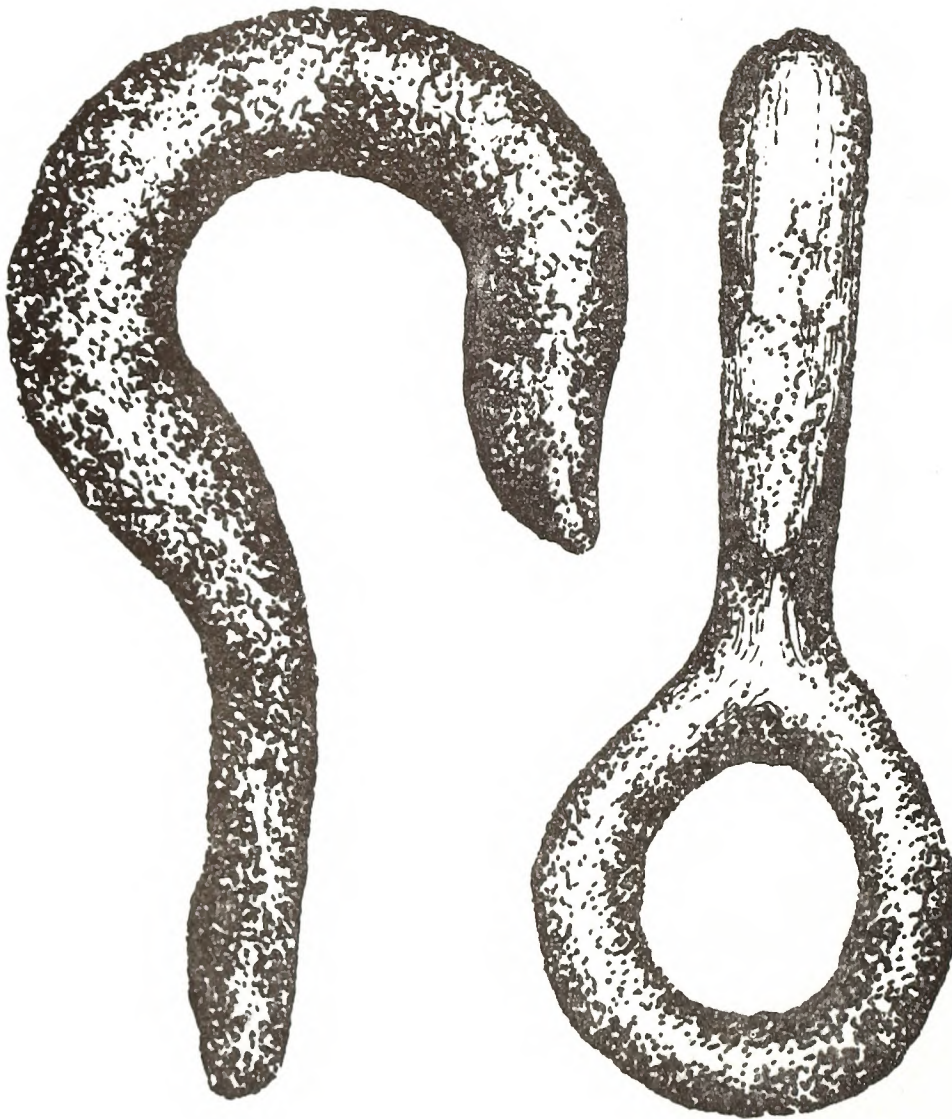
Artifact: Hook

NCDAAH: 0105

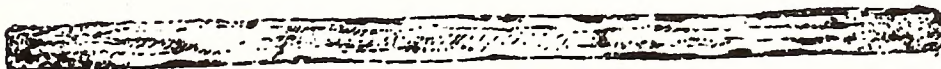
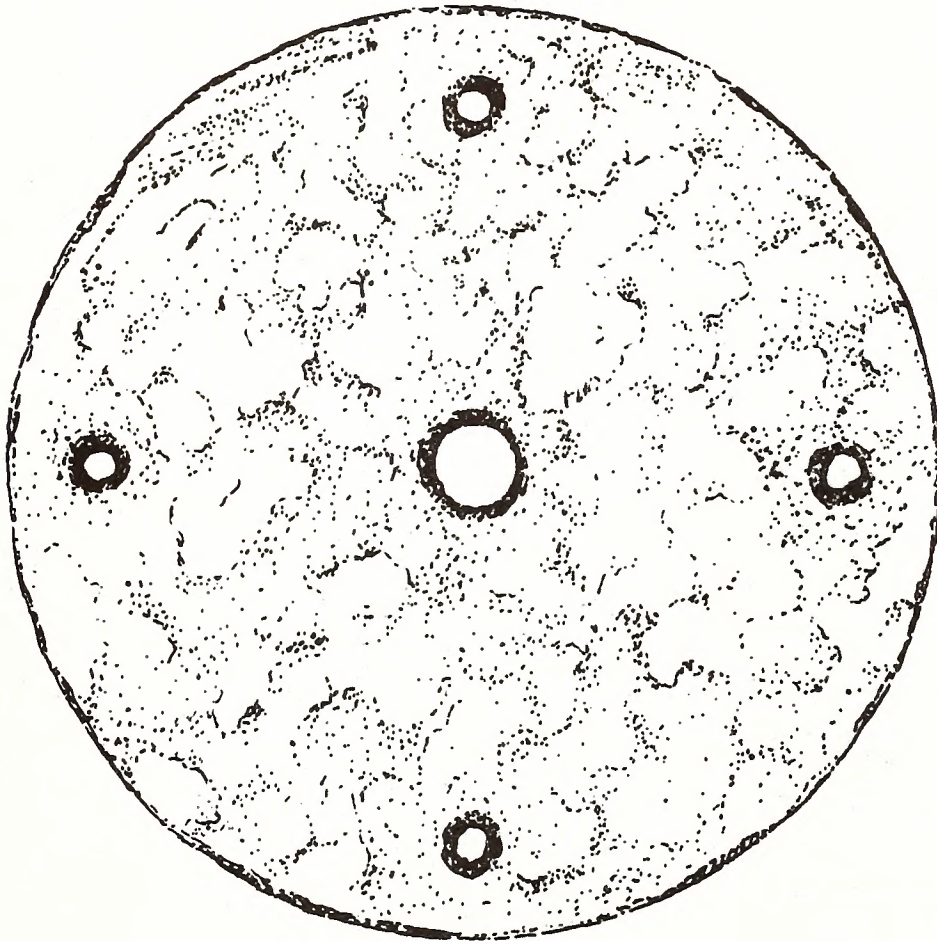
Size: eye diameter 1 1/2 inches; 7 1/2 inches around
outside of throat

Description: excellent

Figure 163 Hook
Scale: Full



Artifact: Iron plate, circular
NCDAAH: 0124
Size: diameter 19 inches; thickness 1 inch
Description: 2 inch hole in center; four 3/4 inch holes
spaced evenly around outside
Condition: excellent
Figure 164 Iron plate
Scale: 1/5



Artifact: Iron bolt NCDAA: 0166
Size: shaft diameter 1/2 inch; length 5 inches
Description: 1/4 inch hole in bottom end; rectangular head
Condition: excellent Figure 169 Iron bolt
Scale: Full



Artifact: Unidentified iron object

NCDAAH: 0159

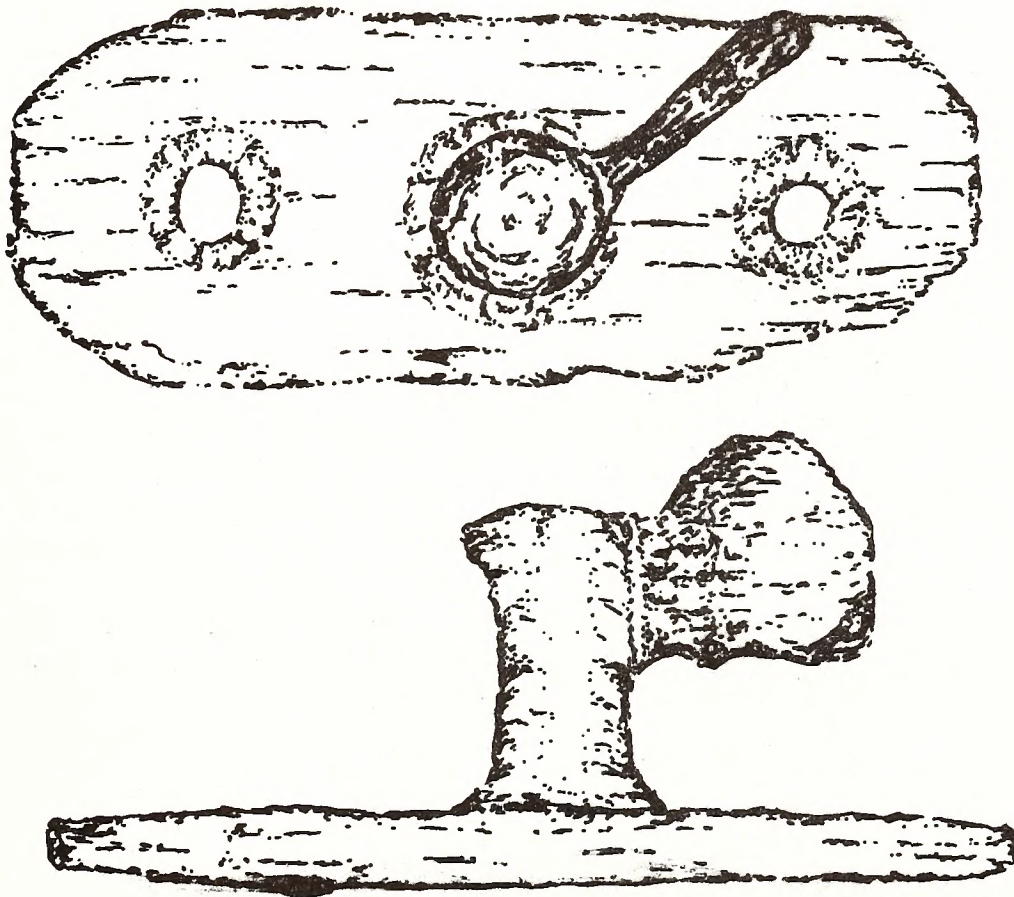
Size: 4 inches x 1 1/2 inches x 3/8 inch

Description: Article has a rectangular base with a screw hole at each end. In the middle there is a 1 1/2 inch high cylindrical projection that rises from the base and has a 1 inch projection attached to it at a right angle.

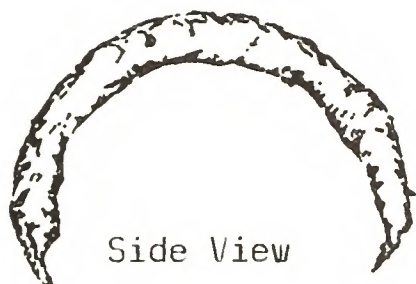
Association: door latch; cabinet latch

Condition: good

Figure 170 Unidentified iron object
Scale: Full



Artifact: Iron ring or chain fragment
NCDAAH: 0201
Size: length 2 1/2 inches; thickness 3/16 inch
Condition: good
Figure 171 Ring or chain fragment
Scale: Full



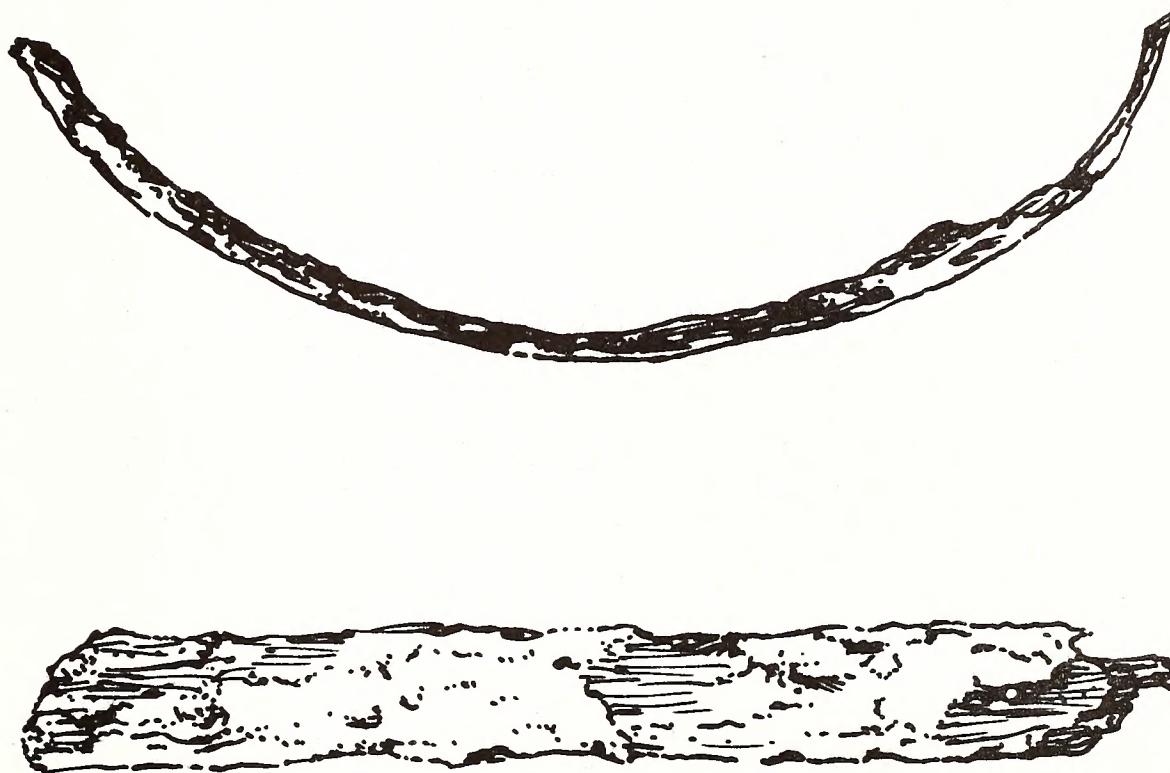
Side View

Perspective
Top View

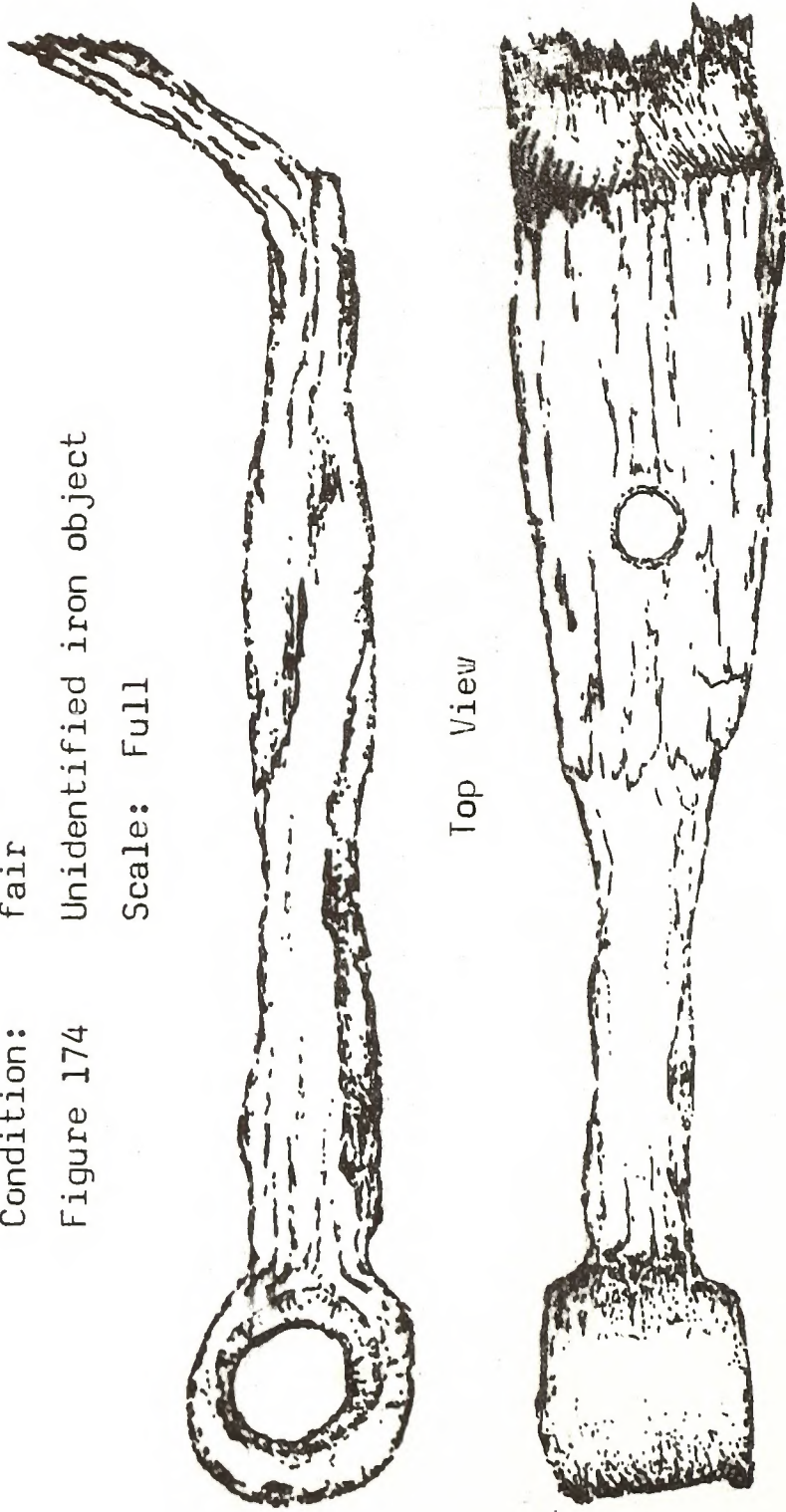
Artifact: Coal clinker
NCDAAH: 0160
Size: 1 1/2 inches x 3/4 inch x 1 1/2 inch
Condition: good
Figure 172 Coal clinker
Scale: Full



Artifact: Fragment of curved iron band
NCDAAH: 0174
Size: 14 inches x 1 inch x 1/4 inch
Association: (1) nave band fragment from carriage; (2)
barrel hoop fragment
Condition: poor
Figure 173 Band fragment
Scale: 1/4



Artifact: Unidentified iron object
NCDAAH: 0177
Size: length 6 inches
Description: see figure
Condition: fair
Figure 174 Unidentified iron object
Scale: Full



Top View

Side View

Artifact: Fragment of iron strap

NCDAH: 0191

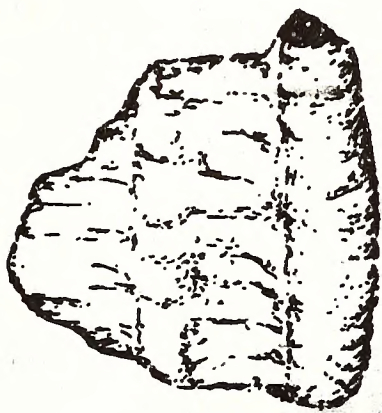
Size: 1 1/2 inches x 2 inches x 1/4 inch

Description: two pieces glued together during preservation

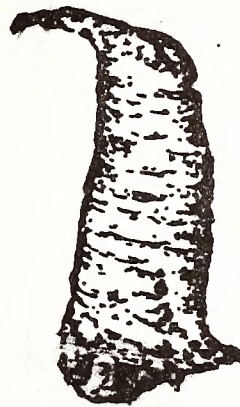
Condition: poor

Figure 175 Fragment of iron strap

Scale: Full



Side



Side



Bottom



Bottom

Artifact: Unidentified iron object

NCDAAH: 0193

Size: 2 1/2 inches x 1/2 inch x 1/16 inch

Description: rectangular, thin piece of iron alloy, grey color, with two 3/16 inch holes and two 1/2 inch x 1/4 inch x 1/16 inch projections at one end, also with 3/16 inch holes

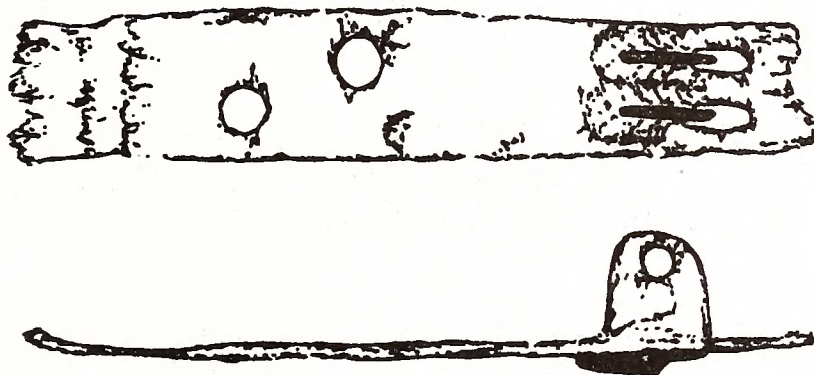
Condition: good

Figure 176 Unidentified iron object

Scale: Full



Artifact: Fragment of curved iron band
NCDAAH: 0195
Size: 16 inches x 1 1/2 inches x 1/4 inch
Description: 1/2 inch hole in one end
Association: (1) fragment of nave band; (2) fragment of barrel hoop
Condition: poor
Figure 177 Band Fragment
Scale: 1/3

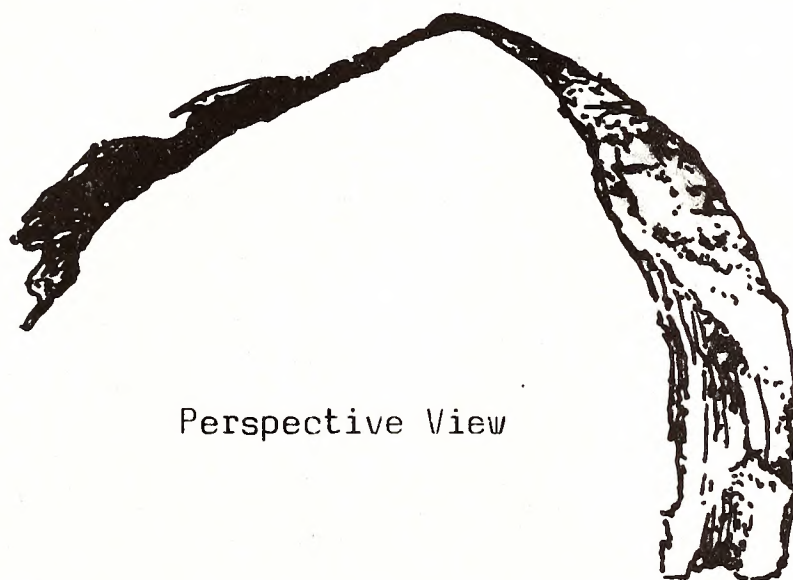


Artifact: Fragment of curved iron band
NCDAAH: 0814
Size: when complete, had a 12 inch diameter; now has 4 inches of circumference missing; width 1 1/2 inches; thickness 1/4 inch
Association: (1) nave band fragment; (2) barrel hoop fragment
Condition: fair
Figure 178 Band fragment
Scale: 1/3

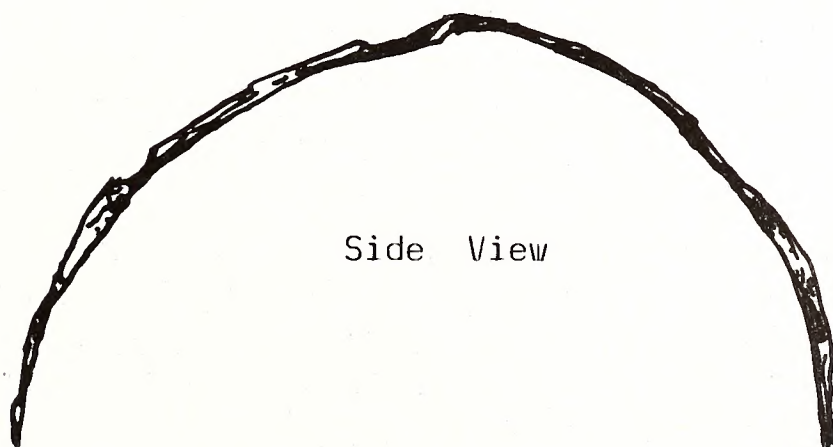


Artifact: Fragment of curved iron band
NCDAAH: 0970
Size: 14 inches x 1 1/2 inches x 1/4 inch
Description: nail hole in one end
Association: (1) nave band fragment; (2) barrel hoop fragment
Condition: poor

Figure 179 Band fragment
Scale: 1/3



Perspective View



Side View

Artifact: Two pieces of curved iron band
NCDAAH: 0971
Size: (1) 6 inches x 1 1/2 inches x 1/4 inch; (2) 7 inches x
1 1/2 inches x 1/4 inch
Association: (1) nave band fragment; (2) barrel hoop fragment
Condition: poor
Figure 181 Band fragments
Scale: Full



Artifact: Fragment of curved iron band

NCDAH: 0975

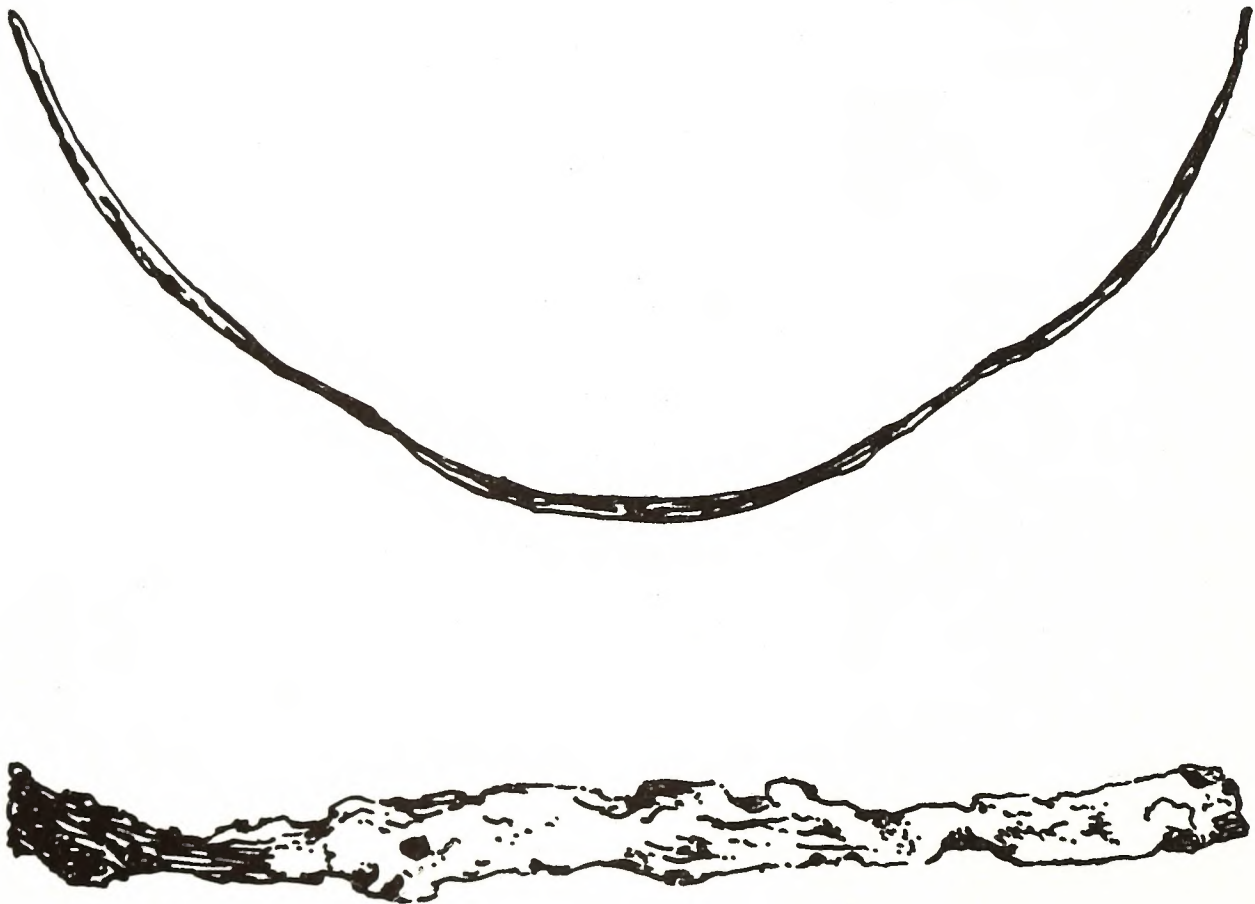
Size: 2 inches x 1 1/2 inches x 1/4 inch

Description: one nail hole 4 inches from one end

Association: (1) fragment of nave band; (2) fragment of barrel hoop

Condition: fair

Figure 182 Band fragment
Scale: 1/3



Artifact: Wood and iron post, ring on top, with two attached rings

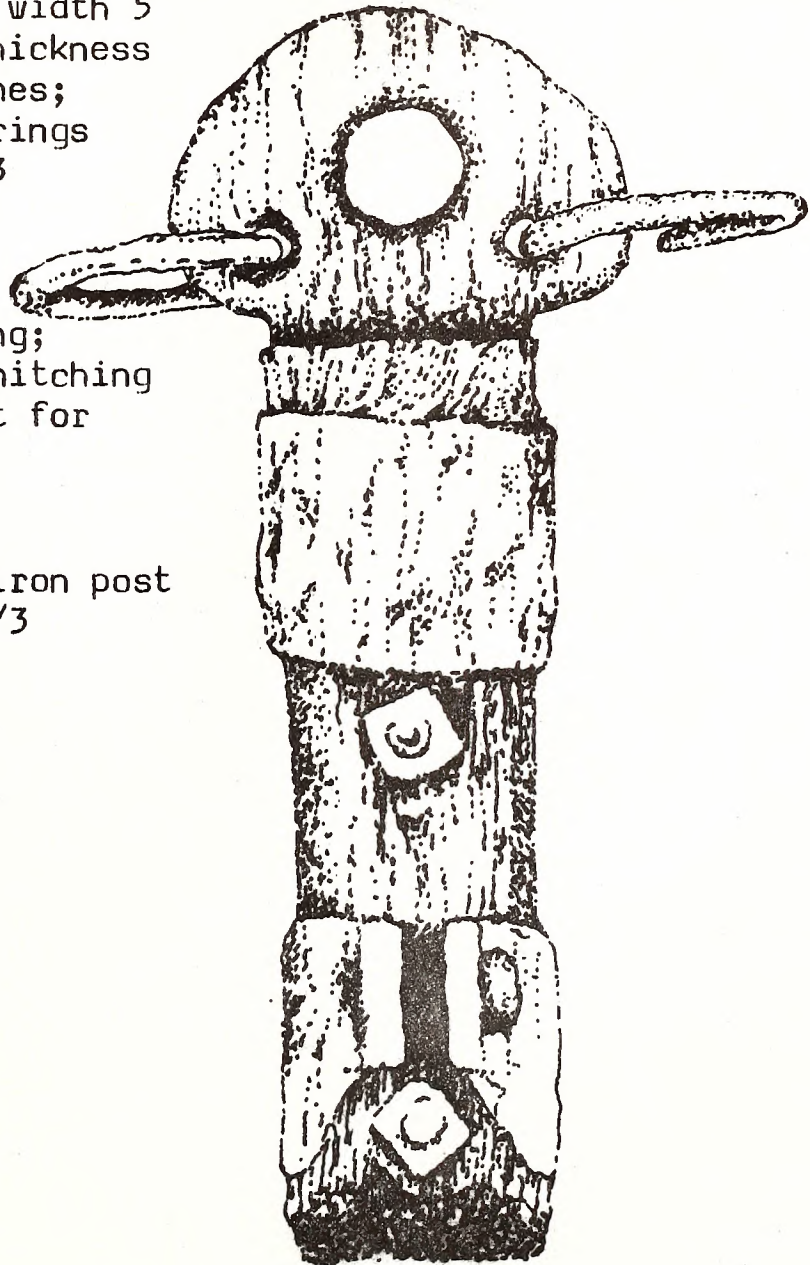
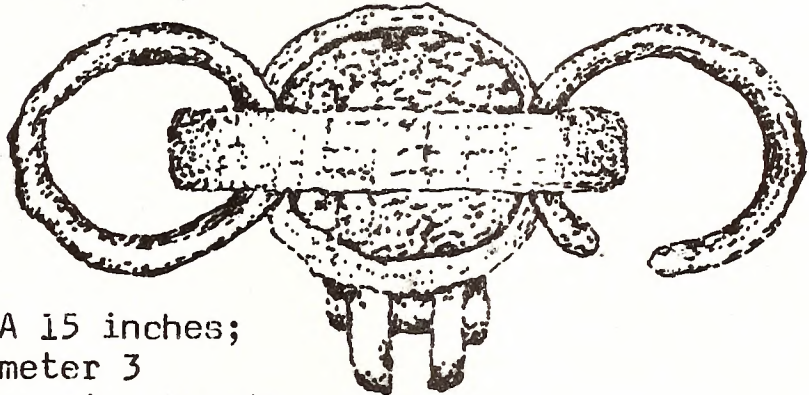
NCDAH: 0974

Size: length 0/A 15 inches;
shaft diameter 3
inches; top ring length
4 inches, width 5
inches, thickness
1 1/4 inches;
attached rings
diameter 3
inches

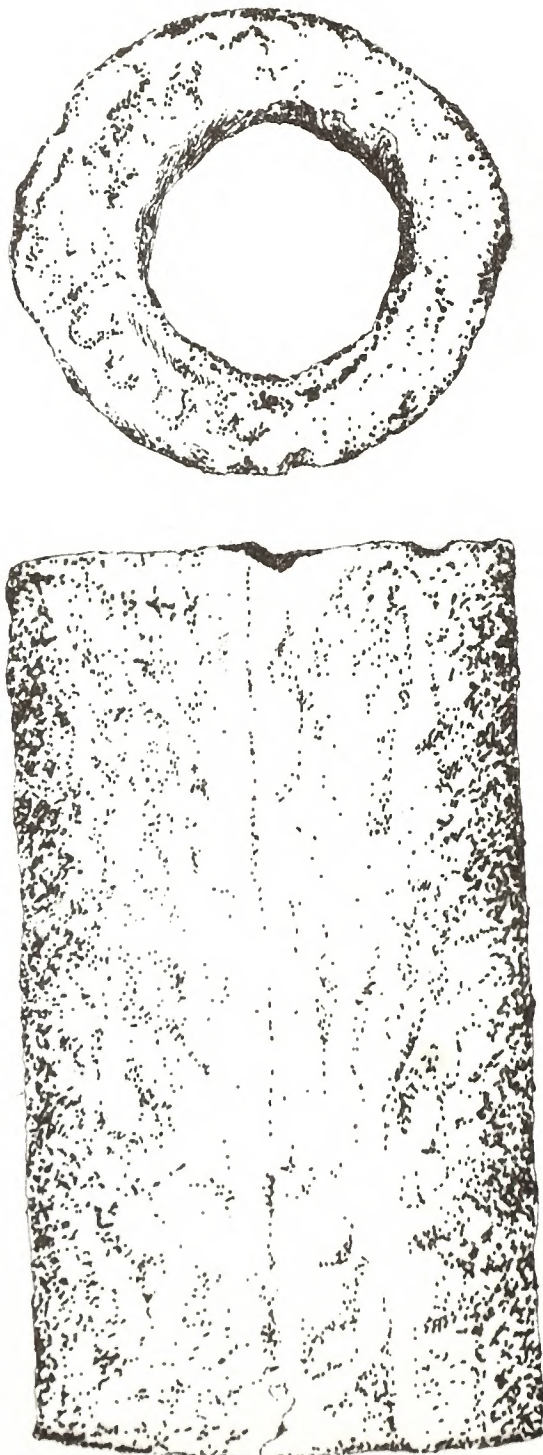
Description: see drawing;
possibly hitching
attachment for
limber

Condition: good

Figure 183 Wood and iron post
Scale: 1/3



Artifact: Fragment of iron pipe
NCDAAH: 0330
Size: OD 2 inches; ID 1 inch; length 3 1/2 inches
Association: sleeve for one side of lifting bolt on rear of
siege and garrison carriage
Condition: good
Figure 184 Fragment of iron pipe
plate
Scale: Full



Artifact: Unidentified iron object

NCDAAH: 0332

Size: 1 1/2 inches x 1/2 inch x 1/2 inch

Description: see drawing

Condition: poor

Figure 185 Unidentified iron object



Top View



Front View



Back View

CONCLUSIONS

Although the Fort Branch Survey and Recovery Project was specifically designed to salvage material associated with the fort's Confederate occupation, time and resources permitted archaeological controls to be maintained. As a result, a number of conclusions can be drawn. By examining the recovered artifacts and data generated by the topographic and magnetic surveys, it is possible to supplement available historical information concerning the number and type of guns used in the fort, the method of their disposal, and the use of the fortification. In addition, conclusions can be made by evaluating the methods and techniques utilized in conducting the project and the effectiveness of such a program in protecting submerged archaeological sites that are threatened by continual looting.

The number and type of cannon that were thrown into the Roanoke River can now be clearly documented. In May of 1865, Lieutenant Commander James S. Thornton recovered a "6 inch caliber rifle-gun, C.W.S., 1852; one smoothbore 32-pounder, 5,522 pounds, J.M.C.E., 1829; one smoothbore . . . J.R.A. & Co., 1851." In 1972 illegal salvage operations produced three additional cannon. These proved to be a 32-pounder banded and rifled naval gun; a 24-pounder

smoothbore, Model 1819; and a 4-inch Blakely rifle. The final four cannon recovered in August, 1977, have been identified as a second 24-pounder smoothbore, Model 1819; a 4.62-inch rifle, Brooke type; and two 6-pounder smoothbores.

Although not found in the river, the breech of one additional cannon, a 32-pounder, also remains at Fort Branch, bringing the total number of documented cannon to eleven. The number and type of these cannon correspond very closely with the last official listing of the fort's ordnance as recorded on Lieutenant Colonel Guion's 1864 map, leading to the conclusion that most, if not all, of these guns were at one time or another mounted in the fort.

With the exception of the 32-pounder banded with its naval gun, each cannon raised since 1972 was recovered with its carriage. The 4.62-rifle and the two 24-pounder smoothbores were mounted on siege and garrison carriages. Both of the 6-pounder smoothbores were mounted on field carriages, and the Blakely rifle was fitted with an iron carriage of English manufacture. An empty siege and garrison carriage was also recovered. Although it is possible that the 32-pounder was mounted in a traveling position

on this carriage for transportation, the large trunnion size of the cannon would have precluded its permanent mounting. If this was the case it would account for the gun and carriage being separated while falling down the embankment into the river.

Of the seven gun carriages that were recovered in 1972 and 1977, only one, a field carriage, had a wheel still attached. The remains of ten additional wheels were also recovered. This would account for all but three of the wheels from the seven recovered carriages. It is possible that these three wheels were recovered during the 1972 salvage operation and were removed from the area or lost. Originally it was thought that the combined effects of long term deterioration and the movement of snags or impact with the bottom of the bluff were responsible for breaking spokes and rims free of the wheel hubs on each carriage. However, examination of the remaining spokes on the one wheel that was recovered partially intact revealed that some of the spokes had been intentionally chopped. This would have contributed to their deterioration and rendered the carriage virtually useless in the event that Union recovery efforts were successful (Fig. 186). Although natural decomposition and the movement of

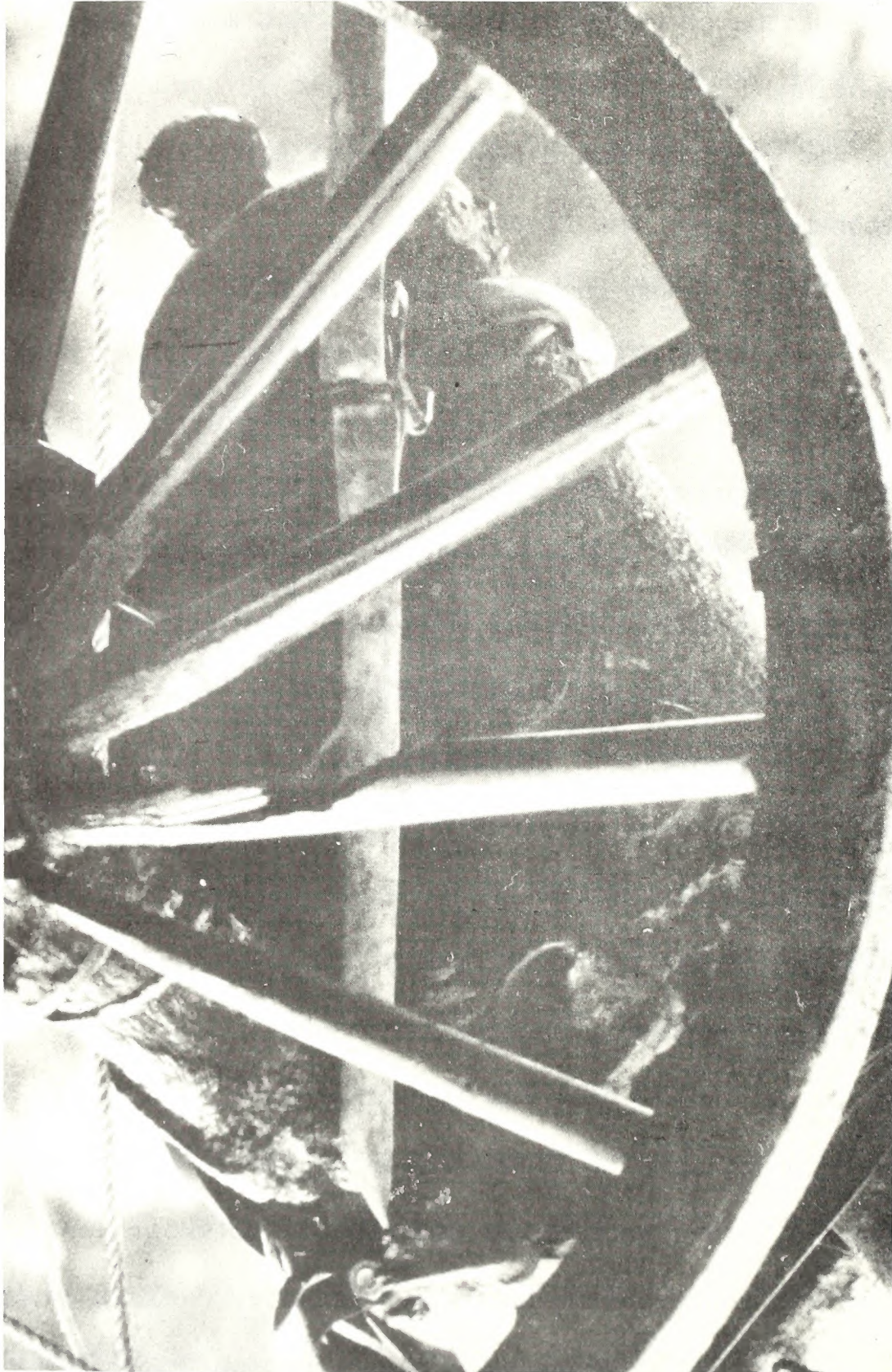


Figure 186. Axe marks on spoke of carriage wheel

bottom material are probably responsible for the excessive deterioration of the carriage trail stocks, it is not inconceivable that they also were similarly weakened prior to being pushed from the bluff.

The location of the guns indicates that they were moved out of Fort Branch prior to being abandoned in the river. This does not seem surprising since it would have been extremely difficult to force them over the earthworks along the bluff. It is also possible that they had been removed to a staging area outside the fortification where they could be prepared for transportation. The presence of considerable ammunition implies that this may have been the case, for it would have been more convenient to remove the ammunition from the magazine and transport it the short distance to the adjacent bluff. Another consideration is the fact that Lieutenant Commander Thornton reported having recovered three guns "sunk beneath the embrasures from which they were thrown." It seems possible that throwing the guns over the embrasure proved unsatisfactory when they failed to reach deep water, and the bluff west of the fortification provided more suitable access to the depth of the river channel.

Examining the distribution and nature of material

recovered from the Roanoke below Fort Branch confirms that the fortification did not serve as a primary residence for the garrison. None of the usual glass, ceramic, and metal residue of habitation was found during the survey. As any convenient body of water seems to attract the by-products of human activity, this may indicate that there was little activity inside the fortification except during construction, maintenance, and martial activities. This is not unusual considering that historical sources indicate that the garrison camped to the west of the fortification. As many small light artifacts were found, it does not seem reasonable that this evidence might have been entirely overlooked or washed away by the current. In fact, there seemed to be virtually no evidence that the current was responsible for any appreciable movement of material on the bottom.

In examining the methods and techniques employed during the survey and recovery operation, several considerations bear comment. Although the magnetometer survey was relatively expensive, the data generated proved to be indispensable in isolating material associated with the fort. Magnetic data made it possible to reduce the scope of the underwater survey operations from a corridor 100 feet wide

and 1200 feet long to an area approximately 100 feet by 100 feet. The corresponding magnetic profile of the fortification will be of considerable value in planning future archaeological investigations at the site.

While zero visibility, snags, and current combined to make the location and positioning of materials inside the search area difficult, the operations appear to have been effective. Grid lanes in the search area provided much needed orientation and permitted staff and students to search the bottom thoroughly by hand. Beat frequency underwater metal detectors proved to be effective in locating metal and composition artifacts at distances of up to 2 feet from the sensor. In areas where the mass of the gun tubes masked detector sensitivity, additional examinations were made following cannon recovery. While a systematic excavation of the bottom in the survey area would have been desirable if time and resources had permitted it, excavations in the area of each of the cannon after recovery produced only one artifact overlooked in the search.

In the final analysis, several conclusions concerning looting at the site must be drawn. First, there is little doubt that had the Underwater Archaeology Branch been in a position to undertake a survey and recovery project prior to

or immediately after the 1972 salvage operation, considerably more information and material associated with the fort could have been recovered. The small artifacts recovered during the 1977 project represent only a portion of the material thrown into the river in 1865. The level of uncontrolled looting at Fort Branch serves to illustrate the necessity for developing a more responsive salvage capability and the need for enhancing legal protection for known sites which, like Fort Branch, represent an attraction for artifact collectors and relic merchants.

Perhaps in a case like this, the only effective solution is to salvage or, if possible, systematically excavate the site. At Fort Branch this has proven the only method of assuring that data and artifacts will be preserved for posterity.

RECOMMENDATIONS

Considering the significance of Fort Branch, the most appropriate recommendation must be development of the site as an historic property in the public trust. With adequate local support this could no doubt be accomplished and funds raised for stabilization, development, and maintenance. A museum and outdoor interpretive exhibits could be effectively utilized to present the history and significance of Fort Branch.

Archaeological evidence indicates that sufficient data is preserved at the site to permit accurate reconstruction of gun emplacements, the magazine, and the commissary structure. Artifacts recovered from the river bottom and excavations inside the fortification can be used to enhance historical and educational exhibits. As the preserved artifacts required a controlled environment, the original carriages and other material from the site could perhaps be displayed in an indoor reconstruction of the river bottom environment. Mounted on reproduction carriages, the original cannon could again be positioned at their emplacements inside the fort.

Fort Branch represents a legacy and provides an opportunity for present and future generations to develop closer

ties with the past. It is hoped that the Fort Branch Survey and Recovery Project will serve to stimulate interest in and support of responsible preservation and development of this historical resource.

BIBLIOGRAPHY

- Babbitts, L. "The Guns of Fort Branch." Military Collector & Historian, Journal of the Company of Military Historians 26 (1974): 115.
- Baker, Henry. "\$100,000 Civil War Cache Found." Skin Diver (November, 1972): 56.
- Barrett, John C. The Civil War In North Carolina. Chapel Hill, N.C.: the University of North Carolina Press, 1963.
- Chapel Hill, North Carolina. University of North Carolina. Louis Round Wilson Library. William Alexander Hoke Papers; Matilda Lamb Morton Papers.
- Clark, Walter, ed. Histories of the Several Regiments and Battalions from North Carolina in the Great War 1861-65. 5 vols. Raleigh, N.C.: State of North Carolina, 1901.
- Daily Progress (Raleigh, N.C.), 1864-1865.
- Delaney, Norman C. "Letters of a Marine Soldier Boy." Civil War History 5 (1959): 45-61.
- Donnelly, Ralph W. "Fort Branch on the Roanoke." Periodical, Journal of the Council on Abandoned Military Posts, (Fall, 1977): 30-38
- _____. "Reference Historian of Marine Corps Gives New Glimpse of Fort Branch." The Enterprise (Williamston, N.C.), July 27, 1978.
- Durham, North Carolina. Duke University. William R. Perkins Library. William Clark Doub Papers; Theophilus H. Holmes Papers; J.R. Stubbs Papers.
- Elmore, Ashby Dunn. "Military and Naval Operations in the Region of the Albemarle Sound, 1862-1864." Master's thesis, East Carolina University, 1971.
- Kure Beach, N.C., North Carolina Department of Cultural Resources. Underwater Archaeology Branch. Fort Branch Files.

- McCallum, James H. Martin County during the Civil War; Including a Roster of Troops from Martin County. Williamston, N.C.: Martin County Historical Society, 1971.
- Manarin, Louis H. and Jordan, Weymouth T., Jr., eds. North Carolina Troops, 1861-1865: A Roster. 6 vols. to date, Raleigh, N.C.: Department of Archives and History, 1966.
- Quinn, Michael W. "The Reserve Unit Aids in Retrieving History." The Voice, Serving First Army (Ft. George G. Meade, Md.), September 2, 1977.
- Raleigh, North Carolina. North Carolina Division of Archives and History. David Clark Papers; Henry T. Clark Papers; Walter Clark Papers; Devereux Collection; Governor Z.B. Vance Papers. Also, "Descriptive Journal of Company B, 10th North Carolina Artillery Regiment," by Lieutenant Colonel Henry T. Guion.
- Sharp, Bill. A New Geography of North Carolina. 4 vols. Raleigh, N.C.: Sharp Publishing Co., 1965.
- Stuckey, Jasper Leonidas, North Carolina: Its Geology and Mineral Resources. Raleigh, N.C.: Department of Conservation and Development, 1965.
- United States Congress. Joint Committee on the Conduct of the War. Report of the Joint Committee on the Conduct of the War, at the Second Session, Thirty-Eighth Congress. 3 vols. Washington: Government Printing Office, 1865.
- _____. Messages and Documents, Navy Department, 1864-1865. Report of the Secretary of the Navy. 38th Congress, 2nd sess., H.R. Ex. Doc. 1. Washington: Government Printing Office, 1865
- United States Naval History Division and Library. Civil War Naval Chronology, 1861-1865. Washington: Government Printing Office, 1971.
- United States Office of Naval Records and Library. Official Records of the Union and Confederate Navies in the War

of the Rebellion. 31 vols. Washington: Government Printing Office, 1894-1927.

United States War Department. The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies. 70 vols. in 128 books. Washington: Government Printing Office, 1880-1901.

Washington, D.C. National Archives. Record Group 109. Confederate Subject file. "Torpedoes." War Department Collection of Confederate Records.

Watts, Gordon P., Jr. "The Fort Branch Survey and Recovery Project." Beneath the Waters of Time: The Proceedings of the Ninth Conference on Underwater Archaeology, edited by J. Barto Arnold, III. Austin, Texas: the Texas Antiquities Committee, 1978.

Wilborn, Elizabeth W. "Report of the Historic Sites Researcher on the Roanoke River Project (Fort Branch), Williamston, August 6, 1969." Raleigh, N.C.: Department of Archives and History, 1969. (Typewritten.)

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